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THE AGRICULTURAL STUDENT

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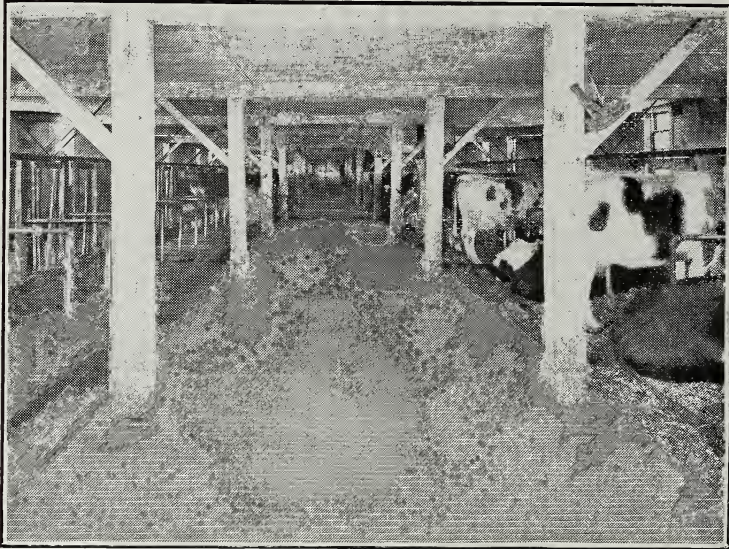
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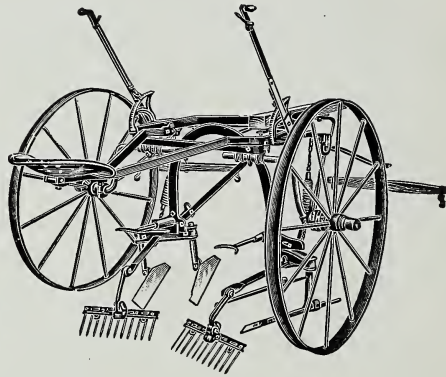
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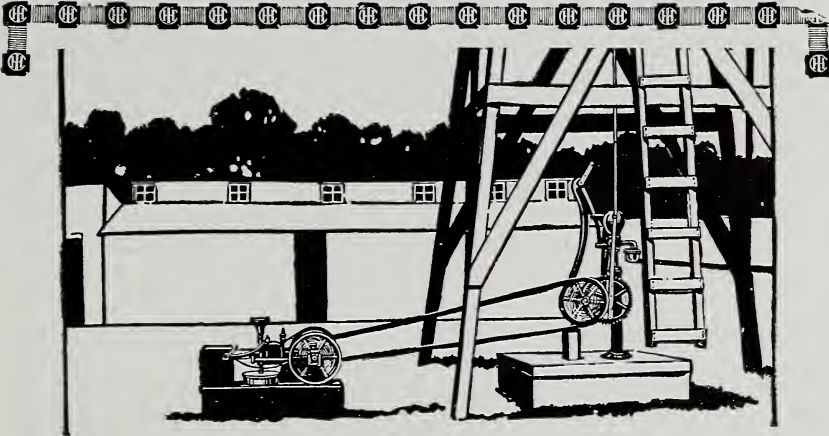
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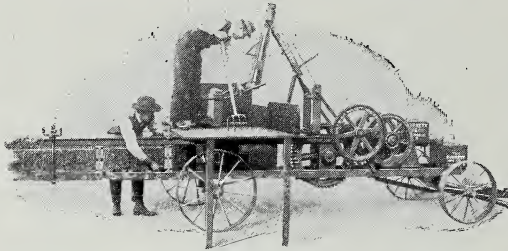
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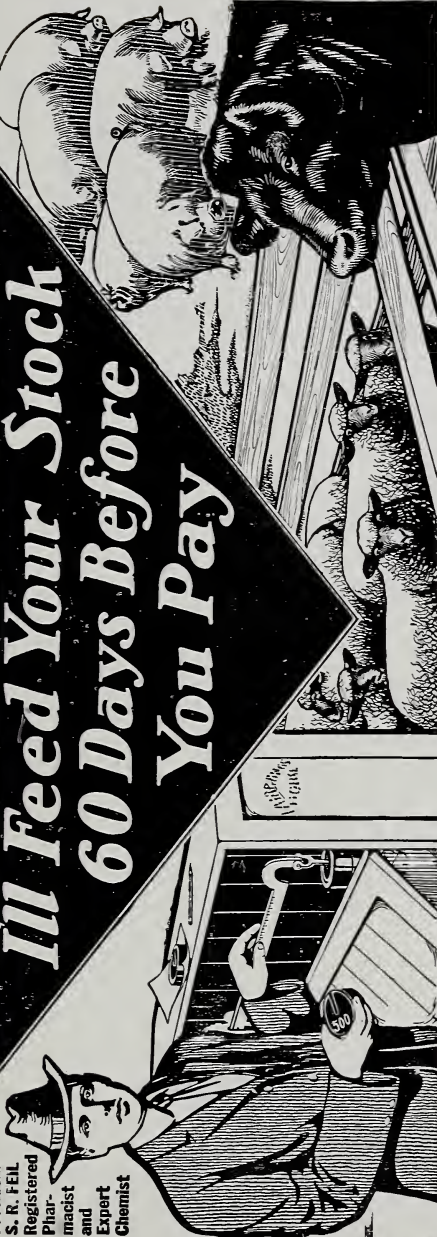
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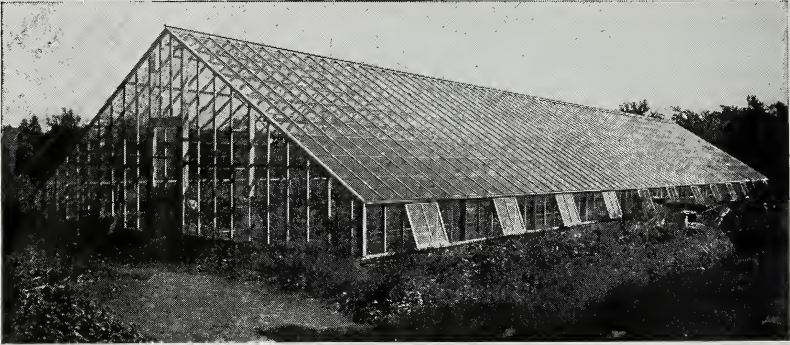
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The American Farmer

who has been a wise leader in progress throughout the history of the nation; who has been the personification of honor, integrity, and gentility towards his fellowmen; who has toiled long and steadily for the prosperity of our country; and who has built "the foundation for civilized society"—

is this volume of
The Agricultural
Student respectfully
dedicated.

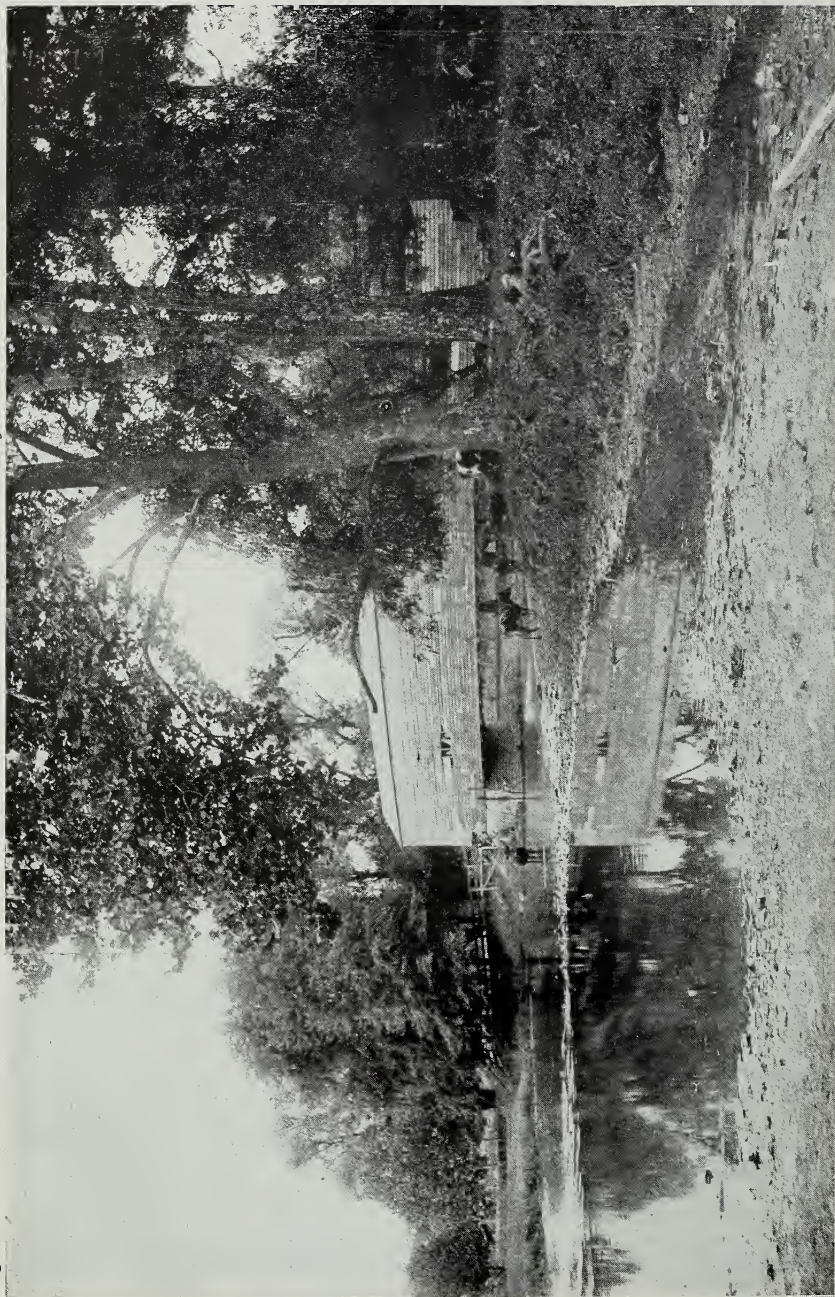






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THE LAST COVERED BRIDGE IN CHAMPAIGN COUNTY.

THE AGRICULTURAL STUDENT

Vol. XXI. OHIO STATE UNIVERSITY, COLUMBUS, SEPTEMBER, 1914

No. 1

FOREWORD

JAMES M. COX
Governor of Ohio

IF "The Agricultural Student" does nothing more than to inform the people of this state of the nature of their own agricultural resources, it will have done much. No state in the union commands a more advantageous position agriculturally. But, because we have paid so much more attention to the industries than to the farms, Ohio today is known more favorably as an industrial state than as an agricultural commonwealth. The fact is that Ohio's greatest industry today should be agriculture. That is to say, there are greater possibilities upon the land than in manufacture and while we would not discount the importance to a community of its manufacturing concerns, too great attention cannot be given to the production of food stuffs.

As now organized, our agricultural commission expects to be able to increase the production of every acre of land in the state. It expects to be able to place under cultivation tens of thousands of acres of land that is not now cultivated. It expects to raise the standard of horses and cattle and sheep in this state. It expects to start a movement from the cities to the country. In all this tremendous work it must needs have the co-operation of the great student body of this state, because the only way the agricultural commission can carry out the great work which has been undertaken is by educating the people in agriculture.

The various organizations pertaining to agriculture, which were merged into the present agricultural commission, were doing as good work as they should have been expected to do under the circumstances, but instead of having a number of small organizations skirmishing independently, we now have a concrete organization working with a united purpose. The results being obtained by the agricultural commission are an answer to the criticisms that were made when it was proposed to consolidate the various institutions that were devoting their efforts to the promotion of husbandry.

I have personally devoted a large part of my official career in an effort to encourage better roads, better schools and better farming, and I am pleased to state that in these efforts I have had the co-operation of many of the most unselfish people of the state. But we have not as yet reached the end of our endeavors. Until every farming community of the state is traversed by a good road, until every child in the state has access to a good school, until every acre of land has been brought up to its highest point of productivity, the work should not cease. You have chosen well for a field of endeavor and I am sure you will find at all times the heartiest co-operation between the executive department of the state and "The Agricultural Student."

THE OUTLOOK FOR AGRICULTURE

WILLIAM OXLEY THOMPSON

President Ohio State University

IN response to your invitation for a few thoughts upon the topic above stated I offer the opinion that there is in the country at large now a very general awakening as to the importance of increased production on the farm. This awakening has not taken any hysterical or ephemeral form, but seems to result from a deepened conviction that the permanent prosperity of the country is based upon a permanently profitable agriculture. In the development of this sentiment a few things are evident and have been characteristic of the past twenty years in increasing force. First, all the live stock interests of the country show a decided tendency for improved types. The day of the indifferent animal is rapidly passing. The dairy interests especially are looking more carefully into the records of dairy cows and the performance of the type as the final justification for its existence. In other words, both beef and live stock men are interested in the questions of financial profit as the basis of developing these interests. Moreover, the conditions under which live stock are produced and the conditions under which dairy products are produced have aroused unusual interest. An increased activity on the part of the state in inspecting beef and dairy products has brought definitely to the minds of the country the fact that the conservation of life and health can be developed more rapidly when proper care is exercised in the preparation of all food products. The net result of this movement is that the question of a margin of profit is seriously considered on the part of the producer of live stock.

Then, too, the increased efficiency of both man and machinery is manifestly having its influence not only in developing the quality of the products but in determining what the products should be. The economic conditions are vastly more important when valuable machinery and efficient men are engaged in production. This makes the product of the farm more and more an economic question in which men readily see the necessity of profit as the basis of activity.

Another phase in the horizon is the development of population. The important cities of the country are growing more rapidly than the smaller cities and much more rapidly than the rural population of the country at large. Certain areas of the rural population are declining in numbers. On the other hand there seems to be no tendency to decrease the rate at which the prosperous cities of the country are increasing. This unproductive but consuming class increasing more rapidly than the rural community leaves for consideration the practical issue whether the increase in output through efficient men can be compared with the increase in consumption by the non-productive classes. Up to date it is probably safe to affirm that the increase in population and the consequent demand for products has outrun the increase in supply. Further, there is no appreciable evidence at present of a reduced cost of living. Men have vainly been consoling themselves with the hope that some sudden development of agricultural products or some modification of existing laws would sensibly reduce the cost of living. The standard of living has so rap-

idly developed in its exacting demands that the labor necessary to create products in response to this more carefully defined demand renders a reduced cost of living very improbable.

In view of these principles so briefly suggested, the opinion is offered that agricultural products are not liable to be materially lower in cost. There may be local and temporary conditions marked by a decline in prices, but these will soon pass away. The general standard of living is having its effect in determining the cost of producing agricultural products. These factors will hardly be overcome by the increase in efficiency of man and machinery. If agricultural prices, therefore, are likely to be maintained for some time in the future, the outlook would seem to be

steady and safe for investment in agricultural occupation. The reward for labor on the part of the man who operates his own farm would seem to be reasonably assured.

It is not to be overlooked that in the contest for place in the world the agricultural situation is as really competitive as in the business world. The indifferent farmer on poor soil will have a hard time competing with the intelligent, careful farmer on good soil. The problem of farm management and in general the economic situation on the farm is just as real as anywhere else in the world. The recognition of this situation is of the first importance to young men who expect to live on the farm and develop there a satisfactory life.



AT HOME.

THE GROWTH AND INFLUENCE OF THE AGRICULTURAL COLLEGE

DEAN HOMER C. PRICE

Ohio College of Agriculture

THE most striking feature in the development of education in the United States since 1900 has been the growth of our agricultural colleges. For almost a generation after they were established the agricultural colleges made little growth and exerted comparatively little influence. But with improved prices for farm products, increased value of farm lands, and our available farm lands all occupied, there has come a nation-wide interest in agriculture that has had a marked effect on the attendance of our agricultural colleges.

With higher prices for farm products the farmer has been better able to educate his children and the farm has offered a better financial outlook for the young man and, as a consequence, thousands of young men are now entering our agricultural colleges where hundreds entered before.

The growth of our own agricultural college is shown in the statistics of enrollment since 1900.

Enrollment in College of Agriculture.

Year.	Total in college of agr.	Total in university.
1901	198	1515
1907	503	2686
1913	1439	4111

Just as the enrollment of the college has grown, its influence has extended over the states. Students who have been enrolled in the college have gone out and are going into the communities throughout the state and making their influence felt for better agriculture. The student goes out from the college not only with a fund of technical knowledge to put into practice but with

a new vision and a broader view of what farm life means.

There are 272,000 farms in Ohio, according to the last census, and when there are 2,720 students attending the agricultural college it will only be one student for each one hundred farms, certainly not a very large representation. There are 1352 townships in Ohio and our present enrollment is only slightly over one student for each township, not a very large representation to say the least.

Although the growth of the college during the past ten years has been rapid, there is no reason to believe that the growth will continue any less rapid in the future. The people of the state are just awakening to the benefits of a course in a college of agriculture. High school teachers, business men, preachers and farmers are advising boys to look well to an agricultural course before entering college.

We are coming to realize that "the future of Ohio agriculture depends upon the education of her farmers." The greatest problem of the agricultural college is to keep pace with its rapidly increasing enrollment. The influence that will be exerted by the college will depend upon the training and the point of view that the student gets while he is in the college. It is through him that the influence of the college must be exerted. No better wish for the college and the state can be made than that the students in the future may exert as wholesome and as helpful an influence on the agriculture of the state as the students who have gone out from the college have in the past.

THE OHIO AGRICULTURAL EXPERIMENT STATION

CHAS. E. THORNE, Director

THE State Agricultural Experiment Station is a creature of German birth, the outcome of the teachings of Liebig and his disciples. The first station, that at Moeckern, was merely a chemical laboratory, organized primarily by a group of Saxon farmers for the examination of chemical fertilizers, and later taken over by the state. Other German stations followed and extended their work to the study of problems of plant and animal nutrition, but their work was practically limited to such as

Station, established some years later and conducted by Augustus Voelcker, under the patronage of the Duke of Bedford.

These English stations differed from the German institutions in that in England the field and stable were made the centers of investigation, to which the chemical laboratory was merely an adjunct. John B. Lawes, a young man just out of college, doubted some of the teachings of Liebig, and set out to test them in the field, realizing that before



MAIN BUILDING AT THE OHIO EXPERIMENT STATION.

tories, glass houses and small gardens. Some of these stations were affiliated with educational institutions, and their researches became a most important agency in the building up of a body of definite knowledge in the place of guesswork which had previously prevailed.

While this system of state-supported research was growing up in Germany, two agricultural experiment stations, supported wholly by private enterprise, had come into existence in England; the Rothamsted Station, conducted by Lawes and Gilbert, and the Woburn could be carried on in chemical labora-

a method can be accepted as a foundation for agricultural practice it must be subjected to the conditions of soil and climate which actually prevail on the farm.

The acquiring of dependable knowledge is certainly not less difficult by the English than by the German method. The measuring rod and the wagon scale are very different instruments from the micrometer and the chemist's balance; but the same principles govern the use of both. The greatest point of difference is that in the field we have to deal with factors of soil and climate that are far less subject to our control

than the artificial conditions which we create in the glass house and laboratory, and hence the work in the field must be many times repeated before safe conclusions may be drawn. Each line of work, however, is the necessary complement of the other.

This work had been in progress in Europe for a quarter of a century before it was successfully transplanted to America. To W. O. Atwater, then a young student just returned from study in the German universities, must be given the honor of leadership in this movement, and the first State Agricultural Experiment Station in America was established under his directorship in Connecticut in 1875, followed by the North Carolina Station in 1877, the New Jersey Station in 1880, the New York and Ohio stations in 1882, and by twelve other stations between that year and the passage of the Hatch Act, in 1887.

The earlier American stations were organized largely along German lines. The men in charge, W. O. Atwater and S. W. Johnson in Connecticut, A. R. LeDoux and C. W. Dabney in North Carolina, and C. A. Goessman in Massachusetts, had been students in the German universities, and naturally were influenced by the German ideals. Their work was chiefly conducted in the chemical laboratory and consisted largely in the analysis of commercial fertilizers for the purpose of protecting the farmer in their use. This work had been established in Ohio in 1881, and its execution was placed in charge of the secretary of the State Board of Agriculture, so that when the experiment station was established it found itself free to devote its energies wholly to research.

The New York State station at Geneva and the Ohio station, both estab-

lished in 1882, the first under the directorship of E. Lewis Sturtevant, the second under that of W. R. Lazenby, were among the first American stations to follow English, rather than German leadership in their work. At both stations the work was chiefly conducted in the field. Both stations immediately instituted investigations in horticulture, and in 1884 Prof. C. S. Plumb became a member of the staff of the New York station, which had begun investigations in the feeding of animals.

At first the field experiments were crude and unsatisfactory. To one inexperienced in such work it seems a very simple matter to plant two plots of grain side by side and compare the yield; so simple a matter that this form of research was by many of the earlier investigators considered unworthy of attention. Others, disappointed by the apparent contradictions in the first results obtained, condemned the method as unscientific and unreliable. Within the last dozen years a very distinguished leader in agricultural research denied the possibility of attaining any definite knowledge by this method.

For ten years the Ohio station was located at the university farm, occupying first the field in which the Observatory and the Ohio Union are now located, and later the entire tillable portion of the farm, including the area on which now stand the engineering buildings, cattle barns and live stock pavilion.

During this ten-year period the experiment station was itself an experiment. It was groping its way through an unexplored country. Very few farmers were aware of its existence and many of them doubted the value of its work. The legislature supported it by an annual appropriation of \$5,000, which was promptly withdrawn when,

in 1887, Congress passed the act providing for similar stations in all the states, known as the Hatch Act, and it was with the greatest difficulty that an appropriation of \$2,000 was secured for the erection of the small greenhouse which was attached to the little office building, recently torn down to make way for the new horticultural building, and which had been erected from the national fund.

Two points of fundamental importance were established during this pro-

tion in 1892. The study of the world's work in agricultural research had convinced the management that the time had come for a systematic effort to adapt the methods and results of this research to the conditions of actual farm practice, and the growth of the university was showing that the lands which were above overflow would eventually be required for building purposes, and hence that there could be no hope of establishing permanent work on the university farm.



FARMING OPERATIONS ON THE EXPERIMENT STATION FARM.

bationary period, namely: that, if the station were to achieve trustworthy results in working out methods for the economical improvement of the soils of Ohio and the maintenance of their fertility, it must be located on a soil more typical of the poorer lands of the state than the rich flood plain and terrace land of the university farm, and that it must be so located that its work could be continued without interruption for an indefinite period.

These, therefore, were the reasons which led to the removal of the sta-

tion. By its removal at that time, after ten years study of the conditions requisite to successful field experimentation, the station was enabled to select land peculiarly adapted to that work, and during the twenty-two years that have elapsed since that time it has developed a system of research which has been recognized as useful, if we may judge by the financial support it has received.

What Has the Station Accomplished?

It is not possible to point to many concrete examples of improvement in

Ohio's agricultural conditions as due to the work of the experiment station. Although its bulletins are free, only about one-fourth of the farmers of the state have taken the trouble to ask for them and the indifference of the three-fourths has largely obscured any progress made by the one-fourth. It is certain, however, that the leading orchardists of Ohio are profiting by the station's work, and that the production of apples by those who give their orchards the necessary care is more than making up the deficiency due to the failure of the neglected orchards. In general farming, the yields of wheat and corn in Ohio were nearly two bushels per acre greater for the 10 years, 1903-1912, than for the 10 years, 1880-1889. It seems, therefore, that an improvement is taking place in the agriculture of the state, and as the attitude of the leading farmers of the state towards the station is generally appreciative, it seems reasonable to assume that this increase has been in part due to the station's influence. The increase in the yield for the state of a peck to the acre of either wheat or corn would justify the entire expenditure for the station's support.

During these thirty years the station has been enabled to increase its staff from a director and a chemist, who gave only part of their time to the station's work, a superintendent of field

experiments, and a student assistant, who served as botanist, to nearly sixty scientists, giving all their time to research and demonstration, with the help of 25 to 30 clerks and foremen and 100 to 150 laborers. Meanwhile the college of agriculture of 30 years ago, with its two professorships, one of agriculture and veterinary medicine, and one of horticulture and botany, with their dozen or so students, who were regarded as being just a little below par, has grown into the largest college in the university, with a faculty of more than fifty professors and instructors and a student body of more than 1300 young men and young women who yield precedence to none.

These facts are sufficient evidence that both college and station have won the respect and confidence of the leaders in Ohio's agriculture, and it is reasonable to expect that this attitude will be followed by a more rapid improvement in the future than has been experienced in the past.

The passage of the Smith-Lever bill opens a new field of effort in the uplifting of agriculture, and with the development of extension service which this bill is intended to foster, the results of the station's investigations will be carried into every farming community by young men trained in the college of agriculture.



THE OHIO AGRICULTURAL COMMISSION

C. G. WILLIAMS, Commissioner

UNDER an act of the legislature passed April 15, 1913, known as Senate Bill No. 178, the following departments and boards were consolidated under the Agricultural Commission of Ohio: The state board of agriculture; the board of live stock commissioners; the board of control of the agricultural experiment station; the dairy and food department; the fish

tioned boards. Activities involving the expenditure of several hundred thousand dollars annually could not be interfered with hastily, nor was there any occasion to do so. It was realized by all that excellent work had been done by the different departments consolidated. The hope was not so much to improve upon this work as to bring it into more harmonious action. It is



STEAMBOAT ROCK AT CLIFTON, OHIO.

and game commission; the board of veterinary examiners, and a portion of the duties of the state board of pharmacy. The agricultural commission was also given the "direction and supervision" of the extension work in agriculture and domestic science of the Ohio State University.

The commission was appointed August 5, 1913, and at once entered upon its duties. Its first act was to set the wheels in motion which were stopped by the abrogation of the above men-

tioned boards. Activities involving the expenditure of several hundred thousand dollars annually could not be interfered with hastily, nor was there any occasion to do so. It was realized by all that excellent work had been done by the different departments consolidated. The hope was not so much to improve upon this work as to bring it into more harmonious action. It is

hardly necessary to call attention to the fact that work of this sort is not the easiest in the world, nor can it be done in a hurry. The greater part of the agricultural work for the year was arranged for before the commission was appointed. Nevertheless, a few opportunities for co-ordination presented themselves and have been made use of. It is perhaps fair, after a year in office, to ask: What has the agricultural commission accomplished?

Institute Work: The commission merged the independent institute work formerly done by the experiment station with that of the division of institutes. A majority of the station staff spent from one to six weeks in the regular institute work—considerably more time than had been devoted heretofore. The station was thus enabled to get in closer touch with the problems of the farm, and relieved of some of the details of institute management. More farmers' institutes were held the past year than ever before, and with a larger attendance.

County Work: An added impetus has been given to the establishment of county experiment farms and apparently a number of counties are going to vote upon the proposition at the coming election. The office of superintendent of the county farm and the county counsellor or agent have been combined, thus avoiding possible conflicts in authority, and giving greater efficiency and permanency to the county work.

Orchard and Spraying Demonstrations: A division of the state was made for orchard demonstrations in order to serve the state as completely as possible and prevent any over-lapping and unnecessary expense. All requests from territory assigned to one division, when received by the other, were at once turned over. No county was visited by two agencies. As a result of this co-ordination it was possible to slightly increase the number of orchard demonstrations held in the state during the spring of 1914, while the average attendance increased 64% over that of 1913. Every request for such demonstrations was granted.

Fair Exhibits: For several years three or four state departments have been making exhibits of their work at

the county fairs. Each department exhibit was handled independently of the rest. Some fairs had two exhibits and some had none. The present season blank applications were sent out at the direction of the agricultural commission from a central source to every fair in the state, advising them of the five divisions which were prepared to make exhibits and requesting the fairs desiring said exhibits to indicate their wishes as to their first, second, etc., choice. All except 14 fairs responded. While it was not possible to grant the first choice in every instance, these requests were granted in so far as possible. Sixty-five assignments of exhibits have been made. It was found impossible to grant the requests of twenty fairs, owing to the large number of fairs occurring certain weeks of the very limited fair season. However, a larger number of fairs will be served than ever before, and, what is perhaps better, there will be the feeling everywhere that these exhibits are going out as "one body, with many members."

Entomological Work: Under authorization of the commission the departments of entomology of the experiment station and the Ohio State University have conferred with the entomologists of the division of nursery and orchard inspection and together have developed plans of work which supplement each other and overlap as little as possible. At a recent conference with the commission the different lines of work were gone over. Some of the faculty of the university were in the employ of the station during the summer vacation in this, as well as other departments.

Forestry and Game Preserves: The commission is gathering information looking forward to a comprehensive

forestry policy which shall conserve existing forest areas wisely, and re-forest areas which are better adapted to forestry than to anything else. Ohio has many thousand acres of such rough, low-priced land. In connection with this forestry work it is expected that it will be practicable to combine game preserves. The new hunter's license law is affording revenue which can be used for this purpose. With the divisions of fish and game, and forestry both under one management, it should be possible to work out a policy of advantage to the state.

Veterinary Examinations: It will perhaps not be out of place to call attention to the work of the commission in its conduct of the examinations for the certification of veterinary practitioners. Any one interested in the methods and records incident to this work will find matters in a very satisfactory condition and on a very permanent basis.

Mid-winter Fair: The commission is proposing to hold a great mid-winter fair in which the various agricultural, horticultural and live stock associations of the state have been asked to co-operate.

Co-operative Extension Work: More recently co-operative agricultural extension work has been organized, uniting the extension work of the agricul-

tural college, the extension work of the U. S. department of agriculture within the state and the extension work of the agricultural commission, under the legal authority of the Smith-Lever act and state laws. The director of this division of extension is the dean of the college of agriculture, who is also a member of the agricultural commission. The projects thus far arranged for relate to demonstrations and movable schools of agriculture and home economics; county agricultural agents; bulletin publication; exhibits at agricultural fairs, cow testing associations and advanced registry work.

The Future: The work thus far accomplished is small, at best, and assuredly so, when compared with future possibilities. The agricultural commission wants to help all the various agricultural and kindred activities of the state and to hinder none. It would forward the work of our agricultural college and experiment station. Perhaps it was to be expected that these new adjustments could not be made without some criticism. If some persistent criticisms, and, perhaps some unfair inferences have come from unexpected quarters, the commission does not mean to chafe under them, but will gladly wait until it is apparent to all that it is working for the best interests of Ohio agriculture.

**Boost Ohio, boost her high,
Boost Ohio and boost her dry.
Boost her valleys—up and down,
Boost her country, village, town.**

**Boost her—North, East, South and West;
Boost her—outside but inside best.
Boost her roads, schools, farms and church,
Boost not alone by words but work.**

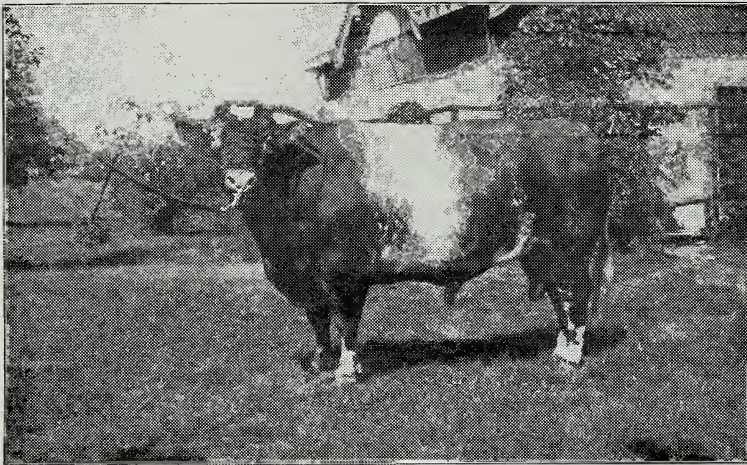
THE PULSE OF OHIO—THE OHIO STATE FAIR

A. P. SANDLES

President Agricultural Commission

“FAIRS and expositions are the time-pieces which mark the progress of nations.” This sentiment was expressed by President William McKinley in his address at the Buffalo exposition on the day he was shot. One great exposition like the Ohio State Fair, held on the soil of China, would be a great missionary work for that pagan country. The Ohio State Fair is a university in itself. Vast in its

Ohio’s resources and ingenuity is money well spent. Every person, old and young, is invigorated, enthused and imbued with a love and admiration of the Buckeye State, and the products of soil and toil are arrayed in orderly fashion. Comparison is a forceful teacher. High ideals and standard types induce uplift tendencies. Many twentieth century man-made machines are well-nigh magic. It is almost true to say man is



PROUD OF HIS STATE FAIR WINNINGS.

scope, magnificent in its purposes, complete in its equipment, beautiful in its outlines and adornment, and instructive in its every detail.

A visit to the Ohio State Fair is a shopping tour and a business trip in search of prices and quality. Ohio folks have learned that it is safe to deal with those who exhibit wares and products at the Ohio State Fair. Inferior animals and inferior machines do not attend this exposition. Quality invites and does not fear comparison. The cost of attending this annual display of

putting brains and gray matter into iron, wood and other devices of inanimate material. Half of the states of the Union contribute to the excellence and greatness of this exposition. A month before the opening of the 1914 event entries are full and all space taken.

Special attention has been given to landscape work in beautifying the grounds. This feature will suggest to the thousands of visitors the beautification of private houses. The Ohio State Fair, by showing how easy and economical it is to have shade and or-

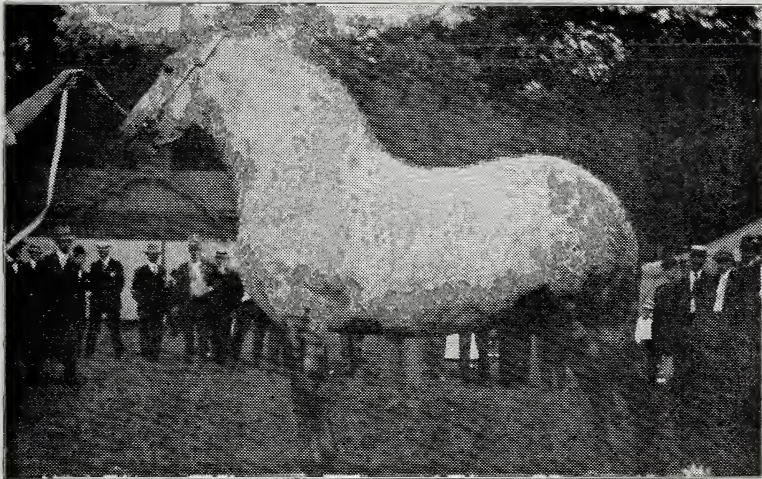
amental trees, shrubs and flowers, hedges and lawns, will largely assist in putting a new dress on Ohio.

One of Ohio's greatest needs is more and better live stock. The Ohio State Fair opens the way. On this battleground of the breeds may be seen and met the men who are recognized as the kings of live stock breeding. Under the guiding hand of Prof. O. Erf and his assistants, one hour spent in the dairy building will prove many times more profitable to the dairyman than staying at home. Dairying is a great and grow-

spraying, seed testing and intelligent planting will add to the family banking account and lessen the number of sheriff's sales.

The departments of the state fair showing the skill and handiwork and accomplishments of womankind are always high spots of interest and value. Two great buildings devoted to women's work are filled from early morning to late at night with a moving, surging tide of humanity.

The entertainment program will contain the top-notch features in the amuse-



A PRIZE PERCHERON STALLION OF THE OHIO STATE FAIR.

ing industry in Ohio. To those who are in the game helpful hints and suggestions are always welcome. The state fair is their friend.

The Ohio State Fair presents the greatest display of machinery to be found in the United States. Every farmer within the limits of the state does himself an injury if he does not see the forty acres of machinery and the men who are the past-masters in the mechanical and inventive world. Ohio is great in agriculture and horticulture. The lessons taught in these great departments of the Ohio State Fair are of great value. The profits of pruning,

ment world. Numerous instructive speaking programs will be given. The magnificent good-roads pageant will in itself be worth a trip to the state capital. Several thousand dollars will be spent in making this pageant the greatest thing of its kind ever attempted on the American continent. Ohio now has a good-roads program in which every citizen is interested. Every device and machine used as a vehicle of travel by man will be shown. The cost of attending the state fair is small. It is a business trip with pleasure added. Money invested in such a trip will return a hundred fold.

BETTER HIGHWAYS FOR THE OHIO FARMER

JAMES R. MARKER
State Highway Commissioner

DO you know how many tons of farm produce are raised annually in Ohio? Have you ever stopped to consider what it costs to market Ohio's products from the farm to the city and railway? And to what extent does the highway enter in the problem of cost? Perhaps you may be surprised to learn the facts in this matter. Glance over this list of annual products of Ohio's farms:

	Tons
Corn	3,363,660
Hay	2,477,673
Wheat	901,410
Oats	765,000
Fruits	423,450
Potatoes and tomatoes.....	310,700
Milk	288,000
Corn, broom and sugar.....	69,000
Onions	46,450
Tobacco	32,339
Rye	11,500
Grapes	9,918
Barley	9,100
Wool	7,855
Butter	7,682
Buckwheat	3,860
Clover seed	3,740
Maple syrup	2,625
Cheese (factory)	2,547
Peas	1,150
Eggs	1,052
Flax fibre and seed.....	590
Sorghum	308
Wine	157
Honey	155
Maple syrup	21

Total tons 8,739,942

Or, in round numbers, the farm produce of Ohio is 8,740,000 tons annually. Of this amount it is safe to estimate that 70% is marketed, or 6,118,000 tons.

Add to this the 111,000 tons of commercial fertilizer used and the 39,900 tons of hogs marketed, making an annual total of marketed farm tonnage of 6,268,900. The average haul to market in Ohio is not less than 7.5 miles. This means that at least 47,016,000 ton miles is the traffic burden on Ohio's roads from the above productive sources alone.

The average cost per ton mile for the United States for wagon traffic has been estimated at 25 cents. It is not less than 22 cents in Ohio. In foreign countries, where good roads systems are more or less complete, this rate is as low as 10 cents. A system of good highways in Ohio will easily reduce this figure to 12 cents per mile. This saving of ten cents per ton mile which could be made with better highways, means that the farmers of Ohio are annually making a hauling expenditure of \$4,701,000 which could be avoided. It is staggering to compute the waste that has been entailed from the lack of a system of good highways.

The farmers of Ohio pay \$874,000 land tax, or 26%, toward the half mill levy fund, and an assessment on state aid roads of \$246,400, making a total of \$1,120,000, which is less than a fourth of the farm loss resulting annually from the lack of better roads.

As an economic policy the state could make no more wise or timely investment than in a system of better highways. The wonder is that we have been so tardy in waking up to the importance of the matter. The force of example is well illustrated in other states which are following suit, which affords some measure of consolation.

But, some one asks, how about the upkeep of these roads? What does the farmer have to pay for this? Many are surprised to learn that the state is paying for the upkeep of the inter-county system of highways with money derived from automobile licenses. Here is an instance in which the other class of road users—the automobile owners—have their just share of taxation put to a consistent use. They are more

the railway and waterway by wagon, and it would be reasonable to estimate that as much as one-third more is finally hauled to the consumer by wagon on what we may call a second handling, making a total of 18,670,000 tons hauled by wagon. In fairness it should be mentioned that many of the above listed products and large quantities of forest, and other miscellaneous products are first hauled in a crude state over



THROUGH THE HILLS.

are appropriated to such good use, and which entails a return to them.

The annual waste above computed is certainly on the safe side. If exact figures could be had it would prove to be much greater. But let us see what the loss is for all traffic that traverses our highways. The total amount of freight handled by rail and water in Ohio is approximately 28,000,000 tons. It is safely estimated that more than half of this tonnage is hauled to and from than willing to pay their licenses, which

the roads before they find their way to the railroads and waterways, thus necessitating a rehauling of these products.

Using the above figures, $7\frac{1}{2}$ miles average haul, and 22 cents and 12 cents respectively for the costs per ton mile now and when the inter-county system of highways is completed, gives a present annual cost of \$30,805,500 for the tonnage traffic over Ohio's highways, with the possibility of lowering this amount to \$16,803,000—thus proving

the possibility of making a yearly saving of \$14,000,000 to the road users of Ohio. Less than \$9,000,000 of this amount is spent by road users other than the farming class.

In this connection it is well to compare the amounts raised by the half mill levy fund by the various classes of taxable property:

Real estate	40%	\$1,400,000
Farm lands	26%	910,000
Public utilities	15%	525,000
Banks	3%	105,000
Personal property...	16%	560,000
	<hr/>	<hr/>
	100%	\$3,500,000

Thus is shown that the farmers of Ohio are suffering over 35% of the total loss caused by excessive costs of

traffic tonnage, while they pay but 26% of the half mill levy fund.

Surely the farmers of Ohio can see that they are blessed with favorable road and tax laws. The contrast with conditions a few years back is marked. No longer is the problem of road construction and repair a burden to the farmer, and a continual drain on his pocketbook with no lasting results or systematic care to show for the expenditures.

We have entered a new era in Ohio. The road building program of the state is not only founded on economical policies, but the results are proving that investments in better highways is a good business proposition, which means saved dollars for all classes of road users, but especially for the farmers.



CHESTERHILL ROAD IN MORGAN COUNTY.

THE CHALLENGE OF THE COUNTRY

DEAN G. W. FISKE

Oberlin College

IT is astonishing to see the new interest city people are taking in what they call the "country problem!" It is not only a well-meaning and sometimes awkward sort of urban benevolence, but a keen interest in rural life due partly to envy. Not only are conferences on country life usually held in the city, but for years we have witnessed a return to the soil by country-loving city dwellers, which suggests that people who can afford to leave the city are rapidly doing so.

This is partly due to the fact that many of the finest folks in the city were born and bred in country homes and still love the open country and the farm. It is an interesting fact that in most agricultural colleges there are many city boys and girls, a very large proportion in such states as Massachusetts, New York, Illinois and even Missouri. It is good to see city-born sons of country-bred fathers fitting for leadership in country life and rural business and professions. The city pays many tributes to the country these days, perhaps the most eloquent of which is this paragraph in the inscription over the massive entrance to the union station at Washington, D. C.:

**The Farm—Best Home of the Family,
Main Source of National Wealth,
Foundation of Civilized Society,
The Natural Providence.**

More people in both city and country believe this than ever before, and it never was more true.

The subject on which I have been asked to write—The Challenge of the Country—may mean either of two things, the country's challenge to the city, or the nation's challenge to the

country itself. I shall be glad to say a few words on each of these points.

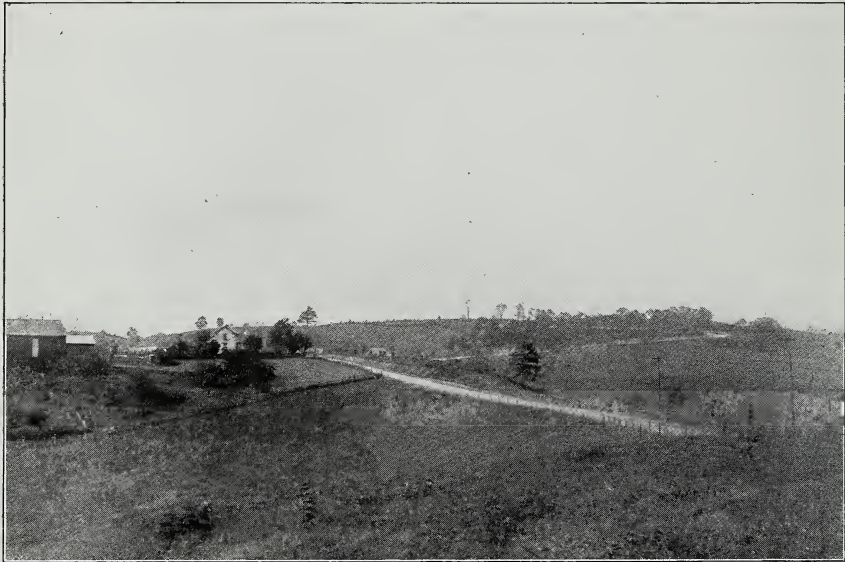
How the Country is Challenging the City: Not for mortal combat! But for better recognition, appreciation and co-operation. There are four facts which the proud modern city must face. First, the country has made the city. At great sacrifice for generations, the rural communities have been building the city, by sending to it many of their best boys and girls and capable men and women, many of whom have become great leaders in the city. City families, with few children or none, tend to become extinct. Immigration and the rural exodus to the city have combined to make an urban gain the last decade of nearly 35%, while the rural sections increased only 11%.

Secondly, the city is largely dependent upon the country. The city of Birmingham, England, learned this suddenly two years ago when it was in the throes of a general railway strike. They discovered that the city had but a week's food supply on hand. With the railroads idle, it was impossible to import food from the farms in sufficient quantity, and starvation threatened. The strike was suddenly settled by an alarmed city. But the city's dependence upon the country is not merely an economic matter. National prosperity, national character, and ideals depend on our maintaining the high character of our farm and village life, for as goes country life, so goes the nation.

Therefore, rural progress is a national issue and the city has very much at stake in it. The city must co-operate with the country in solving the com-

mon problem of raising rural life to a higher degree of efficiency, comfort and happiness. The fourth fact in the country's challenge to the city is also worth considering. After all is said and done, country life is the natural life for humanity to live. It is better for body, mind and morals than life in the congested, overgrown city. As James Bryce recently said in a notable address in Springfield, Mass.: "Bigness is not greatness, and the big city is a menace

meet your opportunity. If the statement is true, "As goes rural life, so goes the nation," that national prosperity, city leadership and national character depend on your maintaining a high grade life in the country townships and villages, then let the farmer realize his unique responsibility. Let farmers have more class consciousness and pride. Theirs is our biggest business yet, with farm products netting a billion a month. Perhaps after all "big



"THE FARM—BEST HOME OF THE FAMILY."

to modern civilization." In his indictment against the city he mentioned seven serious counts: The inevitable deterioration in health, the loss of touch with nature, the division into classes, the increased nervous strain, the detriment to child life, the corruption of politics, and the economic waste.

The Nation's Challenge of the Country: In view of the vast national dependence upon the country, there comes to rural people a distinct call from the nation at large. It is a clear call to you to see your responsibility and to

business" is not on Wall street or Broadway.

But our rural prosperity must not be simply corn-fed. The mind and soul of the country must not be neglected. We need rural ideals strong enough to cope with a rapidly rising rural materialism which is thriving on the new comfort and success in country life. It will prove a curse to our souls, unless our ideals of truth, beauty and goodness keep pace with our bank accounts.

Surely higher ideals must be brought into agriculture as well as into city

business and politics. The doctrine of the "holy land" is gradually becoming a rural ideal. The very soil is holy. Possibly we realize this most keenly of our own native country. What Scotsman does not love his native heath? What son of old Kentucky does not love the "blue grass country?" For the writer, no place is quite so sacred as old Middlesex county in the old Bay State. For him, the very soil there is holy. A certain college man in Illinois, graduating from the state school of agriculture, faced with genuine consecration the problem of his life work. With other more lucrative openings before him, he decided to go back to the worn-out soil of his native county in southern Illinois, which had been cursed by soil piracy for years and sadly depleted; and determined to do his utmost to restore its lost fertility. He had worked out the problem in the laboratory and believed he could accomplish it. It was a noble and worthy purpose.

An increasing rural self-respect and pride in country life must develop rural progress and efficiency. It is coming; but all too slowly. It is a serious and unfortunate fact that we still find in all departments of country life a great fundamental lack of the spirit of co-operation. We find this still very generally true in rural politics, business,

recreation, education, and religion. Country people must learn to vote and play and work and pray together. Only thus will rural life be thoroughly efficient.

Again this challenge comes to the most progressive young men and women in the country to accept the burden of rural leadership. Not to flee in despair to the city, but to stand by rural life and redeem it by investing their lives in it, that a better country life may come. To make this possible, the farmer must give his boy and girl a better chance. If all the best and brightest should leave the country for the city, country life would soon be doomed—doomed to an un-American rural peasantry. This must not and will not happen. Wise farmers already are seeing the point and are shrewdly improving their schools, making them training schools for farm life instead of mere gang-planks to the city. They are making their farm homes more comfortable and happy and the work of the farm less full of back-breaking drudging. The boy who has wheels in his head is given a chance with farm machinery and a farm machine shop. And real recreation and wholesome fun as well as practical religion are adding their part, so vitally necessary to a normal and successful country life. The country will not shirk its "challenge."

Away, away, from men and towns,
To the wildwood and the downs—
To the silent wilderness
Where the soul need not repress
Its music, lest it should not find
An echo in another's mind,
While the touch of Nature's art
Harmonizes heart to heart. —Shelley.

THE RESOURCES OF OHIO

JOHN A. BOWNOCKER

State Geologist

THE resources of Ohio are varied and extensive. The state does not lead in many, but she stands high in a large number and therein lies her great wealth. In some, such as clay, stone and salt, her supply is inexhaustible, while in others the quantity buried in the rocks is limited and the depletion only a matter of a few generations.

Fuels: Ohio is rich in fuels and most valuable by far is her coal deposits. In 1912 the value of the output was more than \$37,000,000, and the state ranked fourth in production. There are at least 16 seams that can be worked in the large or small way. Most valuable of these is the Middle Kittanning or No. 6 seam, which can be readily followed from Columbiana County to Lawrence and is of workable thickness in every county where it is dug. It forms the great Hocking Valley field and is worked on a large scale in Tuscarawas, Coshocton and other counties. Next in importance is the Pittsburgh or No. 8 seam, which is at its best in Belmont and Jefferson counties. The No. 7 coal is worked in the large way in Guernsey and Noble counties, the No. 2 in Jackson County, and the No. 1 in Stark and adjacent counties. The last two fields are now nearly exhausted and the others, except the Pittsburgh, at or past their zenith. As the thicker seams are worked out attention will be given to the thinner beds, but these, too, will disappear and Ohio will cease to be coal producing. The state will probably be a large producer for not more than 100 years more.

Ohio began producing petroleum in 1860, but the output was not large until oil was discovered in the Trenton lime-

stone in 1885. The yield was so large from this source that in 1895 Ohio took first rank among the states and held it until the discovery of vast pools in western areas. In 1912 the value of the output exceeded \$12,000,000. The producing territory lies in the northwestern and southeastern parts of the state, and the oil is gotten from the Ordovician, Silurian, Mississippian and Pennsylvanian rocks, the wells varying from 100 to 3,500 feet in depth. The gain to farmers from this source has been immense and, since the producing territory has been widely distributed, thousands have been benefited. The landholder's royalty has generally varied from one-sixth to one-eighth, and it is nearly all clear profit. The industry is now far past its zenith and will probably continue to diminish to the end. So extensive has been the drilling that no large future discoveries need be expected.

Natural gas was discovered at Findlay in 1884 and caused great excitement in that section of Ohio. Free fuel was offered to manufacturers and it was wasted in great quantities, with the result that the supply was soon inadequate and factories left the gas towns almost as quickly as they came. By 1890 the great supply was a thing of the past. Gas was discovered in the "Clinton" sandstone at Lancaster in 1887 and this proved to be the opening of one of the finest reservoirs yet found anywhere. Since that time the drill has been busy and the field has been extended south into Hocking county and north into Knox, with smaller reservoirs in Ashland, Medina, Lorain and other counties. Recently gas has been

found in the "Clinton" sand in Cleveland and wells in large number have been drilled and the tools are still busy. The quantity of gas produced from this formation in Ohio is incredible; its value in 1912 amounting to nearly \$12,000,000. Large as this is, it represents less than half the value of the gas consumed in the state, and we import on a very large scale from West Virginia. Small reservoirs of gas have been found in Eastern Ohio, but these are relatively unimportant. Tremendous efforts are made by the producers to maintain the supply, but work within the past

large industry does Ohio so surpass her sister states as in clay products, the value of which in 1912 exceeded \$34,800,000, while her nearest rival, Pennsylvania, produced less than two-thirds as much. The industry is widely scattered, but the largest producers are usually on the coal producing rocks, with which are associated enormous clay deposits. Hocking, Perry and Muskingum counties produce bricks of the finest grade in vast quantity. Sewer pipe and drain tile are made in a very large way in Summit, Perry and other counties. Roofing tile is made at New Lexington,



AN OIL FIELD IN NORTHWESTERN OHIO.

few years has not been on the whole encouraging. The limits of the great "Clinton" sand field seem to have been determined and the state will have to rely more and more on West Virginia. At present Ohio ranks third in the value of gas produced.

Recent studies by Dachnowski have shown the presence of large quantities of peat, especially on and near the watershed between Lake Erie and the Ohio river. While these are of no value at present, they form a reserve that may be of great service to future generations.

Clay and Clay Products: In no other

Cincinnati, Lima and Akron. Liverpool is one of the two most important pottery centers in the United States, while Zanesville, Coshocton and other places are large producers. Cincinnati makes an art ware with an international reputation.

The clays of Ohio are not usually of the finest grade and she imports from New Jersey, Georgia and other states. However, clays suitable for ordinary forms of pottery, for brick and tile, are inexhaustible. Moreover, fuel supplies are usually near at hand and shipping facilities are good. The future of this industry is good, indeed.

Limestone and Lime: The western half of Ohio is underlain with limestone of good quality. At present it is burnt for lime on a very large scale in Clark, Wyandot, Seneca, Ottawa, Sandusky and Marion counties, and it could be produced in many others. Eastern Ohio contains much less limestone, but it has been burnt in many places on a small scale. The quality of the Ohio lime is not surpassed and the state is capable of producing any quantity needed.

Much limestone is quarried in the vicinity of Columbus for flux in the manufacture of pig iron, and the same is true at Kelleys Island, Marblehead, Lowellville, Springfield and other places.

Enormous quantities of limestone are crushed for ballast on railroads and public roads and for concrete. Works of this sort may be found in nearly every county where limestone is the surface rock. The supply is inexhaustible.

Building Stone: The Berea sandstone which is so extensively quarried in Cuyahoga and Lorain counties is more largely used for building purposes than any other sandstone in this country. Its market has extended from Boston to Chicago and nearly every large city has one or more fine structures of it. The supply is very large.

A finer grained but somewhat similar rock is formed at McDermott, Scioto County, where it forms the basis of an important industry. Stone from these quarries has been shipped as far as New Orleans and Alberta.

Limestone for building purposes is quarried at Springfield, Columbus, Marion, Bloomville and other places. It is quite safe to state that Ohio has inexhaustible supplies of limestone and sandstone suitable for the highest forms of architectural purposes.

Portland Cement: For the manufacture of Portland cement calcium car-

bonate and clay are necessary. The former occurs in two forms in Ohio—marl and limestone. Marl is utilized for this purpose in the vicinity of Sandusky and limestone at Middlebranch and Ironton. Cement was formerly made from this rock at Wellston and from marl northeast of Bellefontaine. The value of the cement made in Ohio in 1912 exceeded \$1,100,000 and the production may be indefinitely increased.

Salt: The brines in the vicinity of Pomeroy have been used in making salt for nearly a century and the industry still flourishes though on not so large a scale as in former years. Bromine and calcium chloride are important by-products in these works.

Many years ago a deep well was drilled at Cleveland for oil or gas and rock salt was discovered. This led to salt making and the industry has assumed large proportions. In addition to the plan at Cleveland salt is made near Akron, Wadsworth and Rittman. Holes are drilled to the salt and water poured in them. When the water is saturated it is brought to the surface and evaporated. Rock-salt underlies several counties in Northeastern Ohio and the possibilities in salt-making are, therefore, large. The value of the salt produced in Ohio in 1912 exceeded \$5,200,000 and the state's rank was third.

Iron: Iron is the only metal that occurs in commercial quantities in Ohio. The ore is the carbonate and is associated with coal-bearing strata. It was formerly mined on a large scale in the southern part of the state, but at present only one furnace relies on it. The ores could not compete with the much richer deposits from Lake Superior and Alabama, but they may be looked on as a reserve for use after richer deposits have been exhausted.

OHIO AT THE UNITED STATES LAND SHOW

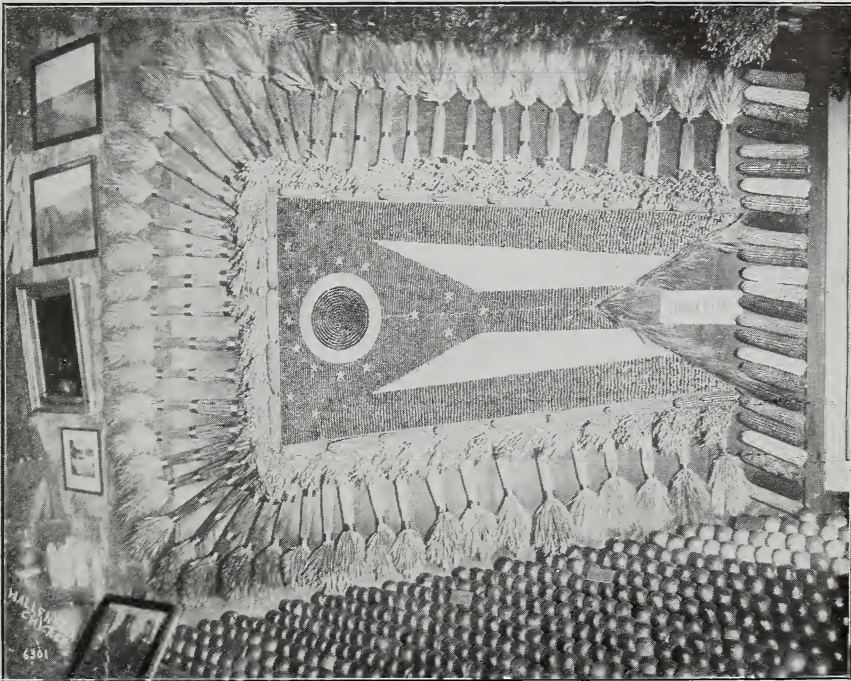
N. E. SHAW

Chief of Orchard and Nursery Inspection

FOR the first time, the state of Ohio was represented at the great land show which has been held annually for the last five years in the Coliseum at Chicago. This great building, over 300 feet in length and 200 feet in width, was completely filled with exhibits of the soil from states, counties, Canadian

lation of the exhibit and in the time and care given to the growing and cultivation of the products which make up the exhibit proper.

The last session of the Ohio legislature appropriated \$2,500 for the exploitation and conservation of Ohio's agricultural resources. A portion of



OHIO AT THE LAND SHOW.

provincial governments, great railroad systems and land companies.

The beauty and attractiveness of these exhibits were enhanced and intensified by the beautiful and expensive decorations which were added by the land show management. Many of these exhibits, especially those of the railroads and some of the provincial governments of Canada, represent large expenditures of money both in the instal-

this fund was used in collecting and installing the Ohio exhibit. The arrangements for making the exhibit were not decided upon until late in September and but little time was available for the collection of agricultural and horticultural products. A portion of the material, especially grasses and grains, were secured from state fair exhibitors. Apples, potatoes, onions, tobacco, sugar beets and other

special crops were hastily secured from the different sections of the state where the crops are grown. Owing to the lateness in deciding to make the exhibit, it was neither possible to secure a very large space or to adequately represent the magnitude of Ohio's many crops and diversified agricultural system.

It was the consensus of opinion of visitors that the Ohio exhibit excelled all others in general attractiveness, and the products of Ohio's soil, hastily gathered compared very favorably with the products shown from other sections where special attention is given to the growing and preparation of material for these exhibits and where irrigation is often used in their production.

One of the features of the Ohio exhibit which attracted considerable attention were the two large flags of Ohio made of Ohio corn. Each flag consisted of about 15,000 grains of corn in the natural colors of red, white and blue. The corn in the Ohio exhibit was by far the best of any exhibit and created a great deal of interest and inquiry, especially from agricultural visitors from the corn-belt states. Occupying the center of the exhibit was a large transparency transportation map of Ohio, showing in different colors here 10,000 miles of steam lines, 3000 miles of traction

lines, her rivers and lakes and Ohio's 100 cities.

It was a source of great pride to former Ohioans, now living in Chicago and the West, to see Ohio represented and view again the products of Ohio soil.

On November 28th, "Ohio Day," Buckeye badges bearing the legend, "The Rainbow Comes Down in Ohio," were distributed to all visitors. No other souvenirs distributed by the different exhibitors created the interest or demand as did the Ohio buckeyes. It was not unusual for former Ohioans to draw from their pockets buckeyes which they had been carrying ever since leaving the Buckeye State, and those in charge of the exhibit were constantly impressed with the idea that pride in the state of their birth remains with Buckeyes wherever they may be.

The things which were made to stand out prominently in the exhibit and in the lectures on the state which were given daily, were: Ohio's fertile soil, large areas of cheap land, diversified agriculture, her great transportation facilities and her large and abundant markets. These are facts which should be carefully considered by every Buckeye before listening to the wonderful stories of the land agent and the boomer for new and undeveloped country.



EXTENSION WORK AMONG THE FARMERS OF OHIO

CLARK S. WHEELER, Supervisor of Extension Schools

EXTENSION work in Ohio is coming more and more to be carried on by means of demonstrations. In taking the college of agriculture to the farmers it is being found much more satisfactory to actually perform the operations which are advocated rather than to simply talk about them. This method is found easier for both the speaker and the listener. Many points which might be overlooked or misunderstood in a lec-

they got information adapted to their own community and just at a time when they needed it. The result was that a great many men were enabled to save money and get better results. This summer, when the announcement was made that instructors would again be sent from the college of agriculture to conduct fertilizer meetings on farms, there was immediately a large response. One hundred and twenty requests for



TAKING A SOIL SAMPLE AT A FERTILIZER MEETING.

ture and the discussion following it are instantly made clear in a demonstration.

The fertilizer meetings on farms which are being held all over the state this month are a good example of the kind of service the college of agriculture is now rendering. These meetings were held last year for the first time. The men who attended had heard talks on fertilizers in the winter for years without making any special application of the instruction received. At the fertilizer meeting on some neighbor's farm

meetings were granted and all these will be held before the last of September. Demonstrations will play an important part in the forty-five one-week agricultural extension schools held throughout the state during the coming winter.

Following the extension schools, the usual demonstrations of pruning and spraying will be conducted in the spring. Here, again, it will be a case of doing the thing advocated instead of merely talking about it.



A FAMILIAR SCENE IN SOUTHERN OHIO.



ON THE OHIO AT POMEROY.



WALHONDING RIVER AND CANAL NEAR COSHOCTON.



BIG FALLS IN THE CUYAHOGA RIVER.

THE COUNTY AGENT IN OHIO

M. O. BUGBY

County Agent of Trumbull County

IN these days, when all classes are directing their attention toward the farm, some demanding a greater output that they may be better and more cheaply fed, some asking a greater share for the farm worker, and some seeking to promote a better social atmosphere in which to develop the highest type of citizenship; various agencies have developed to assist the farmer to more efficiently serve himself, his family and the rest of the world. One of the latest of these agencies is the county agent. The county agent movement is only about three years old, yet it has spread rapidly over the whole country. While it still has the enthusiasm of a new movement, the indications are that when the county agent settles into his place beside the other, but older permanent institutions for advancement of agriculture, he will still be recognized as one of the efficient and necessary parts of the great movement on which will depend not only the future of the farmer, but through him the future of the nation as well.

To the county agent are applied various names, as there are various conceptions of his work. He is often called the "County Farm Expert," "The Farm Doctor," "Farm Advisor," "Farm Counselor," "Farmer's Friend," etc. The term "Expert" does not express his work as we conceive it, neither does the term "Advisor," for both of these terms imply too much that he is simply the dispenser of information which is largely his own. The term "Agent" more nearly expresses what his work should be. He is the co-ordinating agent for the

farmer, the college of agriculture, the experiment station, of all the other agricultural agencies which are active in the locality in which he has been placed.

He not only gives out information, but is also an investigator of local conditions. He does not bring to his work his own abilities alone, but assists in bringing to bear upon the problems of the county, the assistance of men who are really experts, both from the big institutions outside of the county, and from the farm on the inside. It is his business to find out what applies to the local situation, and to bring aid from whatever source possible. In other words, he is the man on the ground, the "agent" of all concerned, and is competitor of none.

The county agent who gets the largest results is not only an advisor, but is also an organizer, and a stimulator of forces already in the county. He does not solve all the farmer's problems, but assists him in finding a solution for himself.

To secure maximum results, a strong working county organization must be in sympathy with the work of the county agent, and assist him at every chance. This organization may be one already in existence or one organized, especially to assist the county agent. The larger the number of people actually pulling together, the greater will be the accomplishment along any line. The work of agricultural advancement is no exception; and therefore, one of the most prominent lines of the county agent's endeavors is obvious.

The county agent lives in the county in which he works. In this respect his

position differs from that of most other agricultural extension workers, and is like that of the resident preacher and teacher, carrying with it the same difficulty and the greater opportunities for service through personal contact. He is still on the ground when the crop is harvested, and if the results of his advice do not "pan out" according to expectations, he should find and explain the reason why, or profit by the failure in future work. He is also in a better position to size up the man seeking information, than is the expert from a distance, and is in a better position to see that whatever advice may be given is carried out correctly. Any information given today which is not fairly understood may be supplemented over the telephone tomorrow.

The actual work taken up by the county agent will vary widely with the needs of the county, and the ability, experience and bent of the agent himself. Two county agents in identical situations may work along in entirely different lines, and yet each accomplish splendid results. The following extract from a letter to the people of this county will illustrate our conception of this scope of the work: "Our aim shall be to help the farmers of this county to secure 'a larger net income per farm,' not only by encouraging better farm management, drainage, seed, live stock; through advice, experiment and demonstration and the organization of a cow test, and breeders associations; but also by encouraging organization, more economical methods of marketing, securing better markets, prices and transportation facilities, including better roads, and encouraging organizations for more economical methods of purchasing. If the average farmer in the county will secure a 'larger net income' from his farm it will mean a decided

boost for all the interests of the county.

'A larger net income per farm' is only a means to an end; that is, each citizen may become a most efficient social unit of the whole community. Therefore, our goal is to develop better rural communities in which to live and develop the most efficient citizenship. Thus the work demands the co-operation of the school, the church, the grange, and all other organizations which are interested in the welfare of the community. Let us work as a unit for the whole county."

In Ohio the first county agent was Dr. H. P. Miller, who began work in Portage County in January, 1913. Inside of the past year agents have been installed in Geauga, Greene, Trumbull, Butler and Montgomery counties at the request of the people in those counties. The agricultural commission, believing that it would add strength and permanency to the work, have decided to combine the office of superintendent of the county experiment farm and of county agent in the future. Therefore, Miami, Clermont, Hamilton, Paulding and Washington Counties, which already had county experiment farms, have been given a county agent, and several more counties, including a part of those which have county agents and no experiment farm, will vote for an experiment farm this fall.

A few of the things which have been actually accomplished by the county agents in Ohio will both illustrate the possibilities and the different lines along which work may be done. Dr. Miller in Portage County, realizing the need of a more economical method of handling fertilizers, thus rendering the cost to the farmer, worked out a more economical method and secured prices, which have saved the farmers of his county in the past year of not less than

eight thousand dollars, and indications are, that he has saved them more than this amount by his advice as to the proper kind of fertilizer to buy. The movement for co-operative purchasing of fertilizer has spread throughout the whole state, so that it will save the farmers of the whole state not less than seventy-five thousand dollars this year.

F. L. Allen, county agent for Geauga County, saw that his county could not hope to develop without better roads, and led the campaign which resulted in a county levy for good roads. He also believed the dairymen of that county were paying too much for concentrated feed stuffs, and has just completed a two-day alfalfa campaign, in which over seventy meetings were held in the county. W. N. Cook, in Greene County, found that some of the fields of alfalfa were doing well and some were not, much of the difference being due to the lack of lime. He found a deposit of marl on the farm of a man who had been paying a high price for lime, and hauling it a long distance. A further search located many such deposits throughout the county. This one item alone would pay his salary for many years. He also organized a co-

operative spraying club, which has been very successful.

F. N. Meeker, of Butler County, has organized a labor bureau, and is doing good service. A. L. Higgins has saved the farmers of Montgomery County thousands of dollars in the purchase of seeds, fertilizers, twine, etc., and is introducing a few new farm implements, which are much needed in that locality.

These few illustrations just begin the story of the work accomplished by the Ohio county agents, but they illustrate the variety of work done. The busy county agent will have a telephone call any time of the day or night relating to any subject on the handling of the soil to the care of babies. His life is a busy one, but it is full of opportunities for service.

My advice to the man who is looking for a place where the pay is good and the work light, is not to consider the county agency; but to the man properly trained, who is looking for a place of maximum service at whatever cost, here is indeed a real opportunity. The county agent is needed in Ohio and he has come to stay. This may not be true with the present individuals at work, but there is a big work for the right man.



THE SOILS OF OHIO

PROF. A. G. McCALL

ACCORDING to the thirteenth census of the United States, the total land surface of Ohio is approximately 26,000,000 acres, of which 24,000,000 acres, or about 92%, are included in farms. Of this farm average about 19,200,000 acres is improved land, representing about 74% of the total land area of the state. It will be seen from the above statistics that more than nine-tenths of the state's entire land area is in farms and that more than

plain whose soils are formed from deposits of sand, gravel, and clay washed from the glacial upland, deposited beneath the lake waters, and later exposed. In the extreme southwestern portion of Ohio a small area of the thinly glaciated upland has been covered to a limited depth by a deposit of fine silty material known as loess. The northeastern portion of the state consists of a border of the Appalachian Plateau, gently rolling to hilly and



CROPS LIKE THESE SHOW WHAT OHIO SOILS CAN PRODUCE—FIRST CUTTING OF ALFALFA ON THE UNIVERSITY FARM.

seven-tenths may be classed as improved land.

The state of Ohio may be divided into five main districts according to the characteristic physical features and the prevailing soil types.

Practically all the central and west central portions of the state consist of an elevated rolling plateau, which has been heavily glaciated and whose surface soils are derived directly from the weathering of the glacial till.

The northern and northwestern portions of the state constitute an old lake

somewhat feebly glaciated. All of southeastern and east central Ohio consists of a rolling to hilly, non-glaciated plateau section whose soils are derived from the weathering of the underlying rocks.

The soils of the glaciated plateau region of central and western Ohio consist principally of yellow, brown, or gray loams, and clay loams. In this section the surface is of an undulating to rolling character. In the west central portion of the state within the glaciated plateau there are considerable

tracts of black mucky soils, or of dark colored loams which are found in the depressions and upon the more level tracts within this territory. The soils of the glacial lake region in northern and northwestern Ohio possess an unusually level surface, and are prevailing dark colored, mucky loams or clay loams underlain by drab or blue clay. Bordering the glacial lake region and immediately along Lake Erie, particularly toward the eastern end of the lake, are numerous sandy and gravelly ridges which mark the ancient beaches of the glacial lakes. The soils of the southwestern counties of Ohio are derived principally from a thin covering of loess overlying both the glacial till and the consolidated rock of the region, and are brown to yellow silty loams, not remarkable for their fertility.

A small portion of the extreme northeastern area of the state consists of a glaciated area of the Appalachian Plateau where it merges with the glaciated plateau of the upper Mississippi Basin. The soils are principally brown or gray loams or silty loams underlain by yellow or mottled silty loam or clay subsoil. Both surface soil and subsoil are frequently well filled with flat angular fragments of sandstone and shale.

The soils of the Appalachian Plateau region of the southeastern and eastern portion of the state vary considerably with the character of the underlying rocks from which they are derived. In

general, silty and clay loams prevail over the limestone and shale regions, while loams and sandy loams are less extensively developed, chiefly over the regions underlain by sandstone. A considerable proportion of the area is too steep or too stony for profitable cultivation.

The average value of farm land per acre for the whole state is \$53.34 and in no county is the average less than \$10 per acre. In general the average values per acre in the counties in the eastern half of the state are considerably lower than those in the counties in the western half. Average values between \$10 and \$25 per acre are reported from 13 counties which form a group in the southeastern part of the state. To the west of this group are four counties and to the north are 22 counties, from which average values of \$25 to \$50 per acre are reported. In 29 counties lying, with but a single exception, in the western and northern parts of the state, the land values average from \$50 to \$75 per acre. Average values range from \$75 to \$100 per acre in 18 counties, which, with the exception of Lake County, lie in the western half of the state. In Lucas County, in which the city of Toledo is located, the average value of farm land is slightly over \$100 per acre, and in Cuyahoga County, in which the city of Cleveland is situated, the average value is about \$160 per acre.

Therefore am I still a lover of the meadows
And mountains; and of all that we behold
From this green earth; of all the mighty world
Of eye and ear—both of what they half create,
And what perceive; well pleased to recognize
In Nature and the language of the sense
The anchor of my purest thoughts, the muse,
The guide, the guardian of my heart, and soul,
Of all my moral being.

—Wordsworth.

ONE PHASE OF JOURNALISM

JOHN F. CUNNINGHAM

Managing Editor The Ohio Farmer

“**Y**E EDITOR” has blithely assigned me the subject blazoned above. In a way it is kind and considerate to leave one to choose his own subject out of a great field. It may also be kind to turn a horse out to browse among a number of fields bounded by low fences; but there is ever the danger that, horse like, he will think that there is better forage in the field just beyond and keep moving about so everlastingly that he will not make a good meal in the aggregate. Likewise in our case, being left so much with which to work, we might wander a long day’s journey, round and round, over and beyond, and still only nibble at the tips of the most luxuriant of the subjects that might furnish real mental nourishment if really devoured, ruminated, and finally assimilated.

Journalism is a great, broad field—as broad as the world and full of changing views and conditions. In it one may range and touch only the high spots, or he may settle down in a small cove or well-fertilized patch and really develop a place for himself and those who sit at his feet to learn. He may rove about and become the leader of different bands of followers, one after another, with none of whom he may become really firmly entrenched; or he may establish himself in a well-defined territory and wield a great and lasting influence. The former may win him quick, though fleeting glory; while the latter course will win for him a power that will endure. To wear well under close association one must possess certain fundamental qualities which will not only win the esteem and inspire the confidence of others, but also tie

them to him in the bonds of wholesome respect, straight-faced, level-eyed faith and constant loyalty. Such a condition can have no foundation so enduring as broad-gauged, genuine character.

The one phase of journalism, therefore, that we will assume is of paramount importance, and which should ever be held up to aspiring journalists as fundamental, is based in the personal character of the editor. The character of the capable editor is bound to dominate the sheet for which he is sponsor. All great publications are dominated by the personality of one or two persons. The editor should seek to inject into his paper as much of himself as is possible, without strangling the motives of his contributors; he should make the contributions of others go largely through his own mold. It is one thing merely to let all contributors express themselves as they like through one’s columns; it is very much another thing to so time and so mold their utterances that they will conform to an established policy; or at least to furnish editorial comment so as to present both sides of a mooted question in order that the readers will really know what their editor thinks of the subject.

Getting down to one class of journalism, we will not go far wrong when we affirm that a higher class of manhood and of character is required in agricultural journalism than in most fields. There are well-defined reasons for this, due to the fact that the farm paper is also the family paper; and what comes into the bosom of the family and is a regular member of the family circle must be clean, strong and trustworthy. It must have a safe and healthy tone

and must not be the vehicle of undesirable statements or suggestions, either in the reading columns or the advertising columns.

The agricultural editor, then, must build all his practical structures upon the broad foundation stone of true, manly character. He must remember that it is more than the farm that he represents, it is the farmstead—the farm home where men and women are guided and where boys and girls are developed under the light of knowledge that is shed by the pages that he pre-

pares for them. Is there a broader field? Is there a more lofty mission? Can there be a higher and more useful service than to pilot in safe channels the thoughts and direct along correct lines the work of the greatest producing class?

From this corner stone of usefulness the field stretches forth in a great reverse perspective. We can only touch the border of it. It is worthy of a mighty tome. But here we have the one phase that is fundamental. Let us all develop it.

OHIO.

The Sun never shone on a country more fair
 Than beautiful, peerless Ohio,
 There is life in a kiss of her rarified air,
 Ohio, prolific Ohio.
 Her sons are valiant and noble and bright,
 Her beautiful daughters are just about right,
 And her babies, God bless them, are clear out of sight—
 That crop never fails in Ohio.

Our homes are alight with a halo of love,
 Ohio, contented Ohio.
 We bask in the smiles of the heavens above,
 No clouds ever darken Ohio.
 Our grain waves its billows of gold in the sun,
 The fruits of our orchards are equaled by none,
 And our pumpkins, some of them weigh almost a ton;
 We challenge the world in Ohio.

When the burden of life I am called to lay down,
 I hope I may die in Ohio;
 I never could ask a more glorious crown,
 Than one of the sod of Ohio.
 When the last trump wakes the land and the sea,
 And the tombs of the earth set their prisoners free,
 You may all go aloft, if you choose, but for me
 I think I'll just stay in Ohio.

SUCCESS WITH LIVE STOCK

CHAS. E. McINTIRE

Chief Agriculturist Ohio Board of Administration

THE first essential of course is the man. The boy, to succeed as a stockman, will have the advantage if he is the son of a successful stockman. He may inherit many of the characteristics of a successful stockman. As he grows up on his father's farm, he will learn many things unconsciously.

The successful stockman needs to know many things he cannot learn from books. Fathers having sons

example set by the father will never be forgotten by the son.

The stock farm will count for much. A good stock farm is absolutely essential to success. The soil of the good stock farm should abound in lime and phosphorus. This means choice grasses, legumes and corn can be grown. There should be springs and running brooklets; to these, ponds, wind pumps and gas engines are no comparison.



CHAMPION SOUTHDOWN RAM AT THE 1913 INTERNATIONAL SHOW—AN OHIO PRODUCT.

whom they want to become stockmen must encourage them. While very young, they should be shown live stock pictures; live stock stories should be read to them; teach them to observe; confer with them and make them believe that the success of the business depends upon them. Later, but still while quite young, give the boy an interest, be it ever so small, and always deal with him on the square. Men, to succeed as stockmen, must be honest as all others should and will fail. The

Good buildings for the housing of both feed and animals are essential. It is possible to keep breeding animals too closely confined. Expensive, warm barns are not necessary and may do more harm than good. Open and straw sheds for winter will be fine except for cows in milk. A good big portion of the time should be spent by the animals in pastures, which are indispensable to successful animal husbandry.

The animals should be adapted to the farm, otherwise they will be handled at

a disadvantage. The class of live stock must be decided upon and the breeder must become a good judge of animals of the chosen class. Much depends upon selection and how can the breeder hope to select proper breeding animals if not a good judge. Genetics or the principles of breeding must be studied and live stock journals read. Stock shows should be attended, successful breeders visited and advantage taken of every opportunity for securing information.

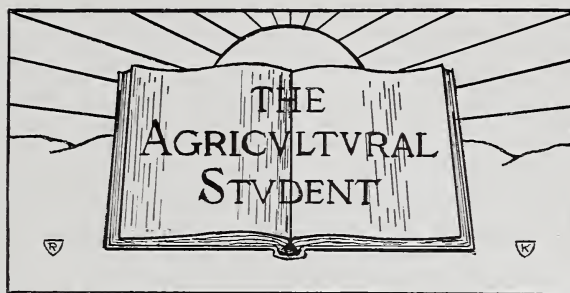
A good breed of the desired class should be chosen. The breed should be one of the grand old breeds that have withstood the test of years. Then adhere tenaciously to the chosen breed. Don't cross breeds. This is the beginning of failure. Breed good animals of the chosen breed. Don't pay some old breeder exorbitant prices when animals that are just as good can be had from some young breeder. Don't buy many at the start. Make a proper start with a few and breed your own animals. You will think more of the animals of your own breeding and by starting in a small way but little capital will be required.

A high-class sire must always be patronized. Why men who breed stock at all are so slow to learn or practice this has always been a profound mystery. Most people are satisfied with just doing things. It is usually about as hard to do a thing wrong as right and always less profitable. The service fee of a good stallion or bull may be \$5.00 to \$10.00 more than a scrub and the offspring worth twice as much or more for breeding purposes. Patronizing a scrub or common sire and failure to give proper care to the youngsters has kept many a man poor.

The better females must be retained for breeding purposes. Many sell the best they have and keep what they can't sell. There is always a demand for good ones; they are always easy to sell and when once all are good, there are plenty of buyers at good prices. The standard of excellence should be the type that tops the market. That can be best learned at the market, the shows and of stock buyers. To secure this type, the breeding animals must themselves be of this type. Don't expect choice animals from common ancestors; if you do, they will surely disappoint you.

Plenty of good feed must be provided. If you are not going to feed well, you had better keep scrubs, for scrubs you will have. Feed is more important than breed. A scrub well fed is better than a good animal half starved. Less feed will be required to make a thousand pound steer or colt at 15 months than at 3 years old. Why not give them the feed and get something out of them? A stunted, undersized animal will be sure to result from failure to feed properly.

Good feeds can be grown on the farm. Corn and timothy hay alone will not do. Young animals cannot thrive on these feeds alone, as they do not contain what the body requires for proper development. These feeds are deficient in calcium and protein, which must be had to make bone, blood and muscle. The legumes are rich in these all important constituents and go well with corn. Good pasture should be provided, without which it is difficult to maintain breeding animals. The farm that produces fine Kentucky blue grass and plenty of it will furnish a lot of the best of feed without labor.



OF
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COLUMBUS, OHIO, SEPTEMBER, 1914.

EDITORIAL

Devoted to the interests of the agriculture and the rural life of Ohio, this number presents many of the lines of activity with which each Buckeye is familiar. Yet few have seen these facts under one cover and presented with one view—that of boosting Ohio as a leading state of the Union. Right well are we proud when we advertise "beautiful, peerless Ohio." Early in the development of the central and western states she was influential in shaping the policies and paving the way for a great nation. Her situation gave her prowess. As "westward the star of empire took its course" the emigrants stopped to gaze at the beautiful scenery and the broad expanse of fertile fields in Ohio. Many of them lingered long to enjoy her exquisite beauty before they journeyed to their homesteads farther west.

They who made their homes in this state soon took advantage of their opportunities and developed the industries and resources. Great has been the progress, especially in agricultural lines. The experiment station established in 1882 began early to investigate many subjects for the farmer. Then came the agricultural college to spread the information of farming to the young men and women of the state. No doubt this has been the greatest aid in agricultural education in this country.

The state board of agriculture, with its numerous bureaus, served as a means of administration and in August, 1913, was succeeded by the Ohio agricultural commission. This commission has solved many new problems and helped to make Ohio a greater state agriculturally through reorganization of the old departments and boards. Through the

action of the experiment station and the commission county agents have been placed in eleven counties of the state and county experiment farms have been purchased. In this way a greater step has been taken to reach the farmer who after all is the chief constituency—the producing class—of our population.

Along this same line is extension work. About a decade ago one man handled all the work of this department. Soon his work assumed such proportions that more people were added to the force until at present there are about 20 assistants. Exhibits, lectures, bulletins, extension trains, demonstrations and schools form a program for extension work in Ohio that is scarcely equaled by that of any other state.

The Smith-Lever bill now gives \$10,000 to each state this year to be spent for the farmers directly through extension work. Under this law many farmers will receive practical instruction and witness demonstrations in farming when otherwise they would not have been led to this light of a brighter agriculture. Similar steps in evolution have taken place in each rural community and each rural home. Farm life is brighter and more prosperous. Community spirit presents itself through the churches and schools. Here in the prosperity of the home is revealed the real strength and wealth of the state.

These are some of the factors in the development of Ohio agriculture that have caused us to make this issue an Ohio number. Each contributor is a specialist in his department. One should read these articles to study the trials and tribulations, and later the standing of Ohio in her agriculture.

Can more be done? Of course it can and easily, too. Now is the time of greatest need. We need greater enthu-

siasm among the farmers for the work of the experiment station and the agricultural commission. The legislature should make greater appropriations for the college of agriculture. Horticulture has attained prominence and now needs substance to keep it going. The county agent has a keen, quick eye for your business and needs the support of all farmers with whom he comes in contact. Everywhere we see an opening for service.

Mr. Farmer, you are needed. Mr. College Man, your spirit, loyalty and enthusiasm are needed in your community just as they were shown at the university. Find a place and wade in. Take part for a greater “progressive agricultural Ohio.”

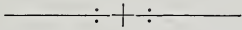
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A profitable vacation has passed. With the first golden days of autumn duty calls us to take up **THE CALL** our books and pens and **TO DUTY.** start in to battle with the waves amid a great rushing maelstrom of life in the university. Old faces are seen again; new acquaintances made. Old scenes seem more familiar and a new life springs up in each one—a voice calling for the best that is in us to make this year the most useful we have ever experienced.

These torrents of students again call to our attention the crying needs of the college of agriculture. New buildings have been erected recently for the college and some will be occupied for the first time this year. But still we are crowded. Some instructors have left the ranks. Buildings need more complete equipment. We shall feel this oppression and shall call out against it until the legislature listens to our cries.

Then to each student comes the personal question, What is this year going to mean to you? Do you wish to make

it a year of leisure and pleasure? Or do you intend to develop your latent powers for usefulness? Remember, you have made a contract with the university when you entered it. It costs the state a large sum of money for each student in the university. Do not betray the trust for personal desires. Your primary purpose in coming here is to become a better citizen of the state, a nobler type of manhood, and an individual fitted to struggle in the game of life. Take advantage of the opportunity which lies before you and show yourself a true son of Ohio State and a worthy representative of the college of agriculture.



With the great strides taken recently in agriculture one wonders what else is needed in the subject

PRACTICAL LEADERS NEEDED. to make this a better world for the farmer to live in. The agricultural college, the experiment station and the agricultural commission form a great administrative trio to disseminate modern scientific farming. County agents, lecturers, and extension work are additional means to spread the "germs" of knowledge.

Yet these factors in our agriculture in some cases do not reach the vital spot. Many farmers fail to understand how these forces work. They are not interested in this higher plane of agriculture because it seems distant or foreign to them. Some may even say they do not see the advantage in these departments of the state. What is the difficulty? Is there a remedy? We say there is. It is true that some farmers of Ohio do not appreciate the experimental work, but that is not the fault of the experiment station staff. Means have not yet been secured to bring this knowledge gained from experiments

to the practical, every-day-use on the farm. Farmers cannot be compelled to receive bulletins and to read them. They cannot be compelled to attend institutes, demonstrations or extension schools. They cannot be forced to send their boys and girls to an agricultural college.

To reach this class of men a plea is made for "home-grown" leaders, who have studied and who understand these problems. They must set such an example by their efforts that the hitherto almost invulnerable farmer is convinced. These leaders must be good farmers and wise managers. They should be able to sight for their neighbors a greater and brighter goal towards which they should aim.

Here is where the agricultural college may play an important part. High ideals are formed in the minds of most men in college. Some plans must be tried out on the farm after the man leaves the college halls. Friends may watch with suspicious eyes at the experiments. Some may fail, but many of the trials will disclose a greater expanse in agriculture than some farmers realized before.

Gradually the doubting ones may be won over one by one to the more recent advances and suggestions on agriculture. The "practical farmer" in the community—maybe the same community where he lived before entering college—may instil more feeling for progress into the lives of other farmers than would come from any institute, fair exhibit, school or demonstration. Farmers are more prone to accept the idea of one who lives for and with them. Often they shun the suggestions of one who seems above them, especially if he has a haughty air in address and personality.

College graduates owe it to the less

fortunate members of their communities to be leaders and teachers through example. Then, by seeing results from a scientific training, farmers of the community will have greater faith in our new agriculture.

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The county agent or agricultural expert idea is a new one in Ohio, but it

THE COUNTY AGRICULTURIST.

is gaining a firm foothold. Eleven counties have secured such men, whose duty it is to counsel with the farmers in regard to all their farming operations. Others, seeing the results in these eleven counties and in other states, now have the question under consideration. Many farmers realize the opportunity presented by this plan and they heed the advice of this counselor. Some strongly oppose the county agent plan, mainly on the ground of expense or because they do not favor any new, progressive movement.

Then there is a third class of judges. These men may not need the advice of the agriculturist. At least they are indifferent to him. They may be prosperous farmers, but do not oppose the county agent because their neighbors are in favor of him. They watch in good-natured tolerance with an occasional glance at the work being done. They will await results before they express an opinion for or against.

With all the murmurings against this advisor, one must admit that the position is full of possibilities. Results in Ohio confirm this statement. Much has been done especially in co-operative buying and selling within the past year through the influence of the county agents. Seed and fertilizers have been purchased at a great saving to the farmer. Live stock has been disposed of to the satisfaction of seller and

buyer. Interesting, instructive, lively meetings have been held by such leadership. Fertility is being restored to the soil and community life is improving.

Yet with all this progress we meet opposition. Some farmers depend too much upon the agriculturist for advice. One instance was brought to our notice where a farmer thought the county agent could analyze his soil and tell him what fertilizer to use for the best results. A just answer was impossible. In the first place, the county agent's work is advisory in a different sense of the term. He should aid the farmer in seeking a solution to the problem. The time of the agent is limited; his field, broad. Hence, much must be done in a given period. It can not be practical demonstration in every case where an experiment farm is not established in the county. Where this is the case the practical is more closely linked up with the theoretical and a stronger foundation has been built for giving advice.

The county agriculturist is still in his infancy, but hopes are bright for his future. The field is open for his service. The farmers need to co-operate with the agent. Give him a fair chance and aid in bringing forth the best of his possibilities.

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"The Agricultural Student" and the Ohio college of agriculture will suffer a severe loss in the

OUR BUSINESS MANAGER.

withdrawal of F. H. Phillips from the university. Mr. Phillips spent the entire summer in the interests of this magazine, but was in ill health since early last spring. At the advice of a specialist he has been compelled to leave for at least a year, which means that some of his work cannot be completed.

This will also necessitate the shifting of his burden upon the shoulders of the others who have been directing the course of "The Student." For this reason it behooves every student in the college to bend his energies for the welfare of the publication that represents the college of agriculture. During the period that Mr. Phillips was in school, he gave very freely of his time for nearly every organization in the agricultural college, and particularly for its magazine. Every student expresses a regret in the loss of such a man as Mr. Phillips, who always had the best interests of the college at heart, who always showed a loyal spirit for his Alma Mater, and who was truly a representative student of the agricultural college.

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The prosperity "The Student" has enjoyed in past years must be attributed in a large measure to its advertisers. Only advertisements from reputable business firms are accepted. On the other hand, a select patronage has been established. Many of those who receive the magazine are in the market for the latest, improved machinery, well-bred live stock, fertilizers or feed stuffs. Those now in college will soon be purchasing equipment or supplies and already they are advising others as to the merits of one or another.

Our local advertisers also deserve the support of every one in the college. When you visit their stores, tell them you saw their ad. in "The Student" and they will appreciate the favor. They will take greater interest in your purchase. We also receive a benefit by this same voice. Then pull together to make this benefit greater to yourself, our advertisers, and your paper.

Certain remarks have prompted us to explain the extent of the work of

YOUR "The Student." The magazine is "published **SUPPORT.** by students in the college of agriculture" and hence is not the work of one society or one small group of men. At least we hope it is not and will not be. It is the publication of every individual connected with the college. In this light each student should consider it. It is true The Agricultural Society has control of its management, but it is not a representative of this society alone.

It has been the policy of "The Student" to boost all worthy organizations in the agricultural college—literary, animal husbandry, horticultural or agronomy. And we expect to continue boosting at all times and in all places for a greater college of agriculture.

In return, we should expect to see at least a small interest taken by faculty members and students in their magazine. Efforts would be fruitless if we were to disregard everyone except those whose names appear on the editorial page. Hence, we urge our professors and fellow-students to give criticism—favorable or adverse. For the present we prefer the latter. Let us know your ideas of our policies as displayed in this issue. What do you think of each department? Do you like the character and choice of articles? Where do you see improvement?

These are some of the questions you may answer. Answer them to us. Hit us hard. We expect it. Visit the office in the Ohio Union and become acquainted with the headquarters of your paper.

Then bring us a contribution. This may be in the form of an article, poem,

cut or photograph, subscription or an ad. Hand us any of your thoughts that you would like to see published. They are sure to receive consideration. We need your support all the time. "The Student" stands in the king row of agricultural college journalism and it takes care mixed with sweat to keep it there. If a few men spend hours each week for the welfare of the publication, cannot other students direct their energies to the same cause?

Boost for your paper and the college of agriculture. Make them both better this year, and surely your efforts will be rewarded.

In presenting this issue to our readers we desire to express an appreciation and

ACKNOWLEDGMENTS. deep obligation to those individuals who have supplied articles or illustrations for this number.

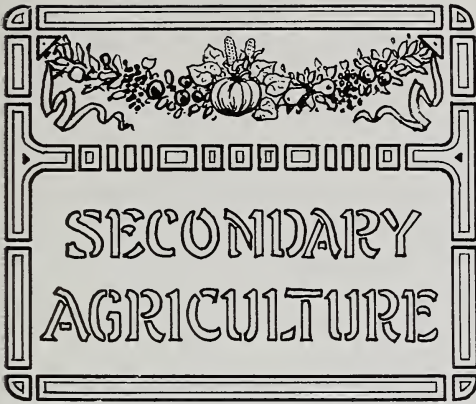
Special credit is due to the International Live Stock Exposition, the State Highway Department, the extension department of the university, the International Harvester Co., the Ohio Department of Agriculture and the De Laval Separator Co., for cuts used in this issue.

To R. J. Kinkel, '16, we are indebted for the artistic sketches which head our departments.

SEPTEMBER.

While not a leaf seemed faded; while the fields,
 With ripening harvest prodigally fair,
 In brightest sunshine bask; this nipping air
 Sent from some distant clime where Winter wields
 His icy scimitar, a foretaste yields
 Of bitter change, and bids the flowers beware;
 And whispers to the silent birds, "Prepare
 Against the threatening foe your trustiest shields."
 For me, who under kindlier laws belong
 To Nature's tuneful quire, this rustling dry
 Through leaves yet green, and yon crystalline sky,
 Announce a season potent to renew,
 'Mid frost and snow, the instinctive joys of song,
 And nobler cares than listless summer knew.

—Wordsworth.



“School begins tomorrow.” When we hear this what a variety of feelings pass through the children and the teachers. Some children have had all their books packed for a week and are ready to start to school. Others have lost their books and don’t like to get ready for school.

It’s the same spirit with teachers. Some are planning great work by which they can be helpful to both the pupils and the community, while others are thinking only of “breaking the kids’ necks” if they don’t behave. Teachers, in planning your work, let the pupils know the program the first day as near as possible. Smile and let everybody feel good. Make all the children have the desire to study.

Parents should let the children start the first day and keep going without missing a day. One or two days missed at the first of school is equal to a week later in the year. Especially is this true in the high school. Do your part and then expect the teacher to do his.

“Collection and Preservation of Plant Material for Use in the Study of Agriculture” is the name of Farmers’ Bulletin 586, U. S. Dept. of Agr. The purpose of this bulletin is to suggest methods of collecting, preparing, mounting and preserving plant speci-

mens of various sorts which can be used by teachers of agriculture. There are many teachers who are called upon to teach agriculture who will doubtless welcome specific information in regard to the preparation of materials needed for illustration and demonstration purposes in the class room.

The second Ohio Weed Manual from the experiment station is valuable for class room work. A description is given of the weeds along with many illustrations. It also names the place of growth of the weeds with methods of reproduction and spreading, and means of controlling and destroying them.

“Weeds everywhere; they thrive in the cornfield, they choke the wheat in the field, they annoy the gardener, they thrive in the meadow, they spring up by the road side, they encroach the swamp, they damage the fleeces of sheep. The rapid increase in the number and variety of weeds should cause alarm.”

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The passing of Prof. Graham from our school is like losing our favorite teacher. Mr. Graham has resigned his position in the extension department and has taken up similar work in New York.

Every pupil of the upper grades and every teacher of the rural schools knows this giant of rural school agriculture, even though they have never seen him. The bulletins of his department are found in every school library and in almost every farm home.

Mr. Wheeler, who is one of the strongest men that has been turned out by the Ohio College of Agriculture, takes Mr. Graham’s place. He has been associated with Mr. Graham in the extension work and is well acquainted with the system that has been established.

AGRICULTURAL EDUCATION IN THE PUBLIC SCHOOLS

LESTER S. IVINS

Agriculture has been taught in the public schools of our state for the past twelve years. The first work along this line was undertaken in the rural schools in the southwestern agricultural district. The records available are indefinite, consequently we do not know what teacher in this district really started the work.

The writer introduced the subject in the course of study in a high school in Warren county in 1903, and received credit from the State School Commissioner. This state official said at that time that no high school had received credit for this work previous to this year.

S. A. Harbourt, who is now a supervisor of the Northeastern district taught the subject in his high school in 1904. Even as late as the year 1907 there were only six or seven schools in the state where the subject was taught according to a definite plan so that it could be recognized by the State Department of Education. Several townships introduced the subject into the course in the rural schools in 1908.

The report of the State Department of Education shows that in the year 1909 the total number of students who were studying agriculture in the grades in the state was 1560. This number was largely in the elementary grades. State Superintendent F. W. Miller's 1912 report shows that in 1910 the number of pupils engaged in the study of this branch was 1940; in 1911, 11,608; in 1912, one year after the Supervisors of Agriculture had been at work the total number of students increased to 117,505. At present over 175,000 students study the subject from a recognized textbook.

Since agriculture's successful introduction in the seventh and eighth grades and in the high school, nature study has been introduced in the lower grades in hundreds of schools. Our department does not have a record of the number of pupils studying nature study, but we have estimated the number at 150,000.

The supervisors having charge of this work realized that merely the study of agriculture from a textbook was not sufficient, and, consequently, planned for the organization of clubs to carry out corn-growing contests and other contest work as well as work in the school, home, and community school gardens. As a result of our efforts along these lines over 20,000 school children in the state took up garden work during the summer of 1912. Exhibits were held in the fall by many of the schools doing this garden work, and premiums were offered on the products grown in these home, school and community gardens.

The number of boys and girls engaged in the growing of corn and other field crops through the summer of 1912 was over 2,000 and about 900 of these were in the state corn-growing contest that was inaugurated by the Ohio Department of Agriculture the same year through the efforts of Hon. A. P. Sandles. Great increases were made over the 1912 numbers in both 1913 and 1914. Stock, and poultry judging, seed testing contests, milk-testing associations, and community surveys are also encouraged in connection with the regular work of the school.

Our Board of Supervisors is required under the Cahill law to co-operate with county fair boards in the estab-

THE MEN WHO HAVE PLACED AGRICULTURE IN PUBLIC SCHOOLS ON A FIRM FOUNDATION.



1. Frank W. Miller, State Superintendent of Public Instruction, Columbus, Ohio.
2. H. L. Goll, Swanton, Ohio, Supervisor of Agricultural Education for the North-west District.
3. S. A. Harbourt, Somerton Road, Cleveland, Ohio, Supervisor of Agricultural Education for the North-east District.
4. J. R. Clarke, 373 Wilbur Avenue, Columbus, Ohio, Supervisor of Agricultural Education for the South-east District.
5. L. S. Ivins, Lebanon, Ohio, Supervisor of Agricultural Education for the South-west District.

lishing of young people's agricultural exhibits at each county fair. When we begun our work only three of our fair boards gave this matter any attention, but today nearly half of the counties of the state have such exhibits, and offer premiums on agricultural products at the county fairs by school children.

Agricultural exhibits at the local school and township exhibits have been encouraged in all parts of the state. An examination in high school agriculture will be given on the second Friday of April of each year in all first and second grade high schools. The five pupils standing highest in these examinations in each agricultural district will receive four year scholarships in the agricultural college. It is expected that the awarding of these scholarships to those pupils standing highest in these examinations will encourage a more thorough study of the subject in high school. It should have a tendency also to link up the public school work with that of the college of agriculture.

The Agricultural Commission has indirectly done much to encourage the study of agriculture in the public schools by the offering of free trips, cash prizes, and scholarships in the agricultural college. Our department has endeavored to co-operate with the commission in every way possible in order that pupils of the public schools might receive the benefits from the efforts of this commission.

The teaching of agriculture in the schools, supplemented by all forms of contest work together with the establishment of local, township, county and state school exhibits of agricultural products has done much to create a new

interest in rural education. It is having a marked influence upon the attitude of the rural education. It is having a marked influence upon the attitude of the rural boy and girl towards country life. Many more farm papers and magazines are taken in the country than formerly. Boys and girls who once said that they cared little for the farm and intended to make their future home in the city have been influenced through the study of agriculture in the schools and club work at home to completely change their former plans and have decided to remain on the farm. It has kept the student in school longer because he has been interested in the subject matter studied. Parents, teachers and school officials have been very generally convinced that the teaching of practical school subjects increases the efficiency of the school and improves the home life of the pupil. The teaching of agriculture has opened the way for more instruction in manual training, domestic science and other vocational subjects. "The fact," says State Superintendent of Public Instruction, Frank W. Miller, "that the Supervisors of Agriculture have been called to address over five hundred Farmers' Institutes and three hundred rural life meetings on the teaching of agriculture in the public schools during the past three years convinces me that the rural people have greatly appreciated the progress made in their schools by the introduction of agriculture." Mr. Miller further states that the introduction of agriculture has produced better schools, and has done much to prepare rural people for the great forward movement accomplished by the passing of the new laws.

A FARMER'S IDEA OF THE NEW SCHOOL LAWS.

A backward look at the schools a few years ago and a glimpse into the future seems like a dream. The change has been both great and sudden as a result of the new school laws. Many people found fault with the promoters of the new laws before they were passed, but now they are sitting back waiting for the first month of school. Like any new thing, many will find fault with it without seeing anything good.

It is not expected that there will be any material change in the taxes the first year. This is a result of a saving on fewer schools in many places, and a saving by there being no extra salary for two of the county examiners. Then too, the appropriation by the last session of the legislature will help out.

The repealing of the Boxwell-Patterson law has been a good thing. At present the examination for entrance into the high school will be under the charge of the county superintendent, and the pupils will be permitted to take the examination in their own schools. This saves a long wearisome ride to the county seat where the excitement of strange surroundings has been a hindrance. The high schools should profit now by an increased enrollment.

The fact that neither the county nor district superintendents will be in charge of schools affords an opportunity for them to spend their time among the schools. This provides a means for picking out the good teachers and the dropping of those who simply get certificates and draw salaries.

According to the old law courses of study are adopted by school boards for a term of five years. This makes it impossible to make much of a change in this line for a few years. In time it is probable the county superintendent will make the course of study and recommend a uniform kind of books. Since all boards of education have more or less influence in choosing the county superintendent they will work together for mutual benefit. If this officer proves efficient he may be hired for a term of three years.

The double system of supervision will increase the average attendance of both the large and the small school. In the future if a school drops below an average attendance of twelve it is suspended.

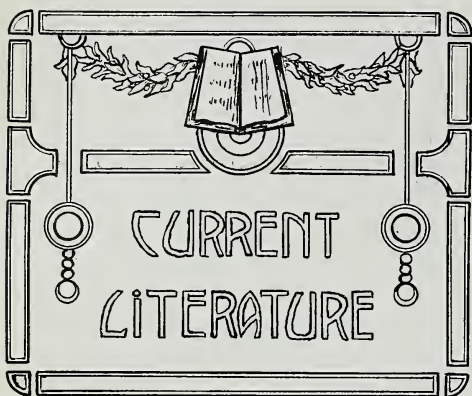
Fewer people and smaller families in the county than formerly make it impossible to keep up many schools. Centralization has been proposed as a remedy but this is too sudden and unnecessary. A two room school with two teachers in charge will be more accessible to the pupils than centralization and provide better instruction than at present. A central township high school saves paying neighboring townships for high school instruction.

Eventually the high school will have a summer session for the teaching of agriculture. At present it is impossible to give much practical instruction. It will be necessary for plots of ground to be provided under the supervision of competent teachers.

ALVA HILL,

Pres. Warren Co. School Board.





“Manures and Fertilizers,” by H. J. Wheeler, is a new book in The Rural Text-book Series. It is intended as a reference work for students and up-to-date farmers concerned in the scientific phases of agriculture. The availability and advantage of the different kinds of fertilizers are discussed in detail. The results of a large number of exhaustive experiments and plot tests are given. Every farmer and agricultural student will find this book of great value. 389 pages, illustrated. Cloth, \$1.60. Macmillan Co., New York.

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“Practical Dairy Bacteriology” is the title of a valuable dairy book by H. W. Conn. It contains a complete exposition of the important relation of bacteria to various problems of handling milk. The sources of common milk bacteria, the danger of disease infection, dairy and marketing methods and public health are each treated in detail. The book will appeal to the practical dairyman as well as to the teacher and student in dairying. 314 pages, 88 illustrations. Cloth, net, \$1.25. Orange Judd Co., New York.

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“Farm Structures,” by K. J. T. Ekblaw, is the latest thing out on this subject. It is intended for the use of classes in agronomy and also as a guide

book for the average progressive farmer.. The book begins with a description of building materials, followed by a discussion of basic methods employed in simple building construction, then presenting typical plans of various farm building in which the principles of construction and arrangement have been applied. Descriptions of rural equipment and farm life conveniences are appended. 347 pages, 150 illustrations and drawings. Cloth, \$1.75. Macmillan Co., New York.

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“That Farm,” by Harrison Whittingham. This is a story of how a successful dry goods merchant goes back to the land. Before deciding to take the step, he reasons that he has built up a successful department store by common sense and an accumulation of business experience. Why should not this work in farming, with its lessened competition? How Mr. Whittingham loses money trying to run his farm at a distance, and how he finally turns the tide from loss to profit by his own personal management, makes a very interesting and instructive book. 230 pages, illustrated. Net, \$1.25. Doubleday, Page & Co., Garden City, N. Y.

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The International Live Stock Exposition has published an “Album of 1913 International Champions,” which contains all the awards and is profusely illustrated with the 1913 winners. It also gives some of the features of the show and its history. All the 300 pages are filled with the best of show ring stock. The book may be obtained from the secretary, B. H. Heide, of Chicago, for 50c.

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“The Business of Dairying,” by C. B. Lane, of the U. S. Department of Agriculture, is a treatise combining clear-

ness and practicability. Business methods are especially emphasized. Management of dairy farms, methods of keeping records, selection and breeding in the herd, feeding, sanitation and marketing are some of the subjects discussed. No dairyman should be without this book. 234 pages, illustrated. Price, net, \$1.25. Orange Judd Co., New York.

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"The Management and Feeding of Cattle," by Thos. Shaw. All phases of the cattle business—beef and dairy—are carefully defined and explained in this text. The rearing of calves, baby beef, care of bulls, fitting beef animals, dairy cattle feeding and management, marketing and common ailments are given the greatest attention. No efforts have been spared to make the subject complete and instructive for the student or stockman. 462 pages, illustrated. Price, net, \$2.00. Orange Judd Co., New York.

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"The Gasoline Engine on the Farm," by Xeno W. Putnam, is a treatise describing the operation and care of the gas engine and its application to all farm work. The installation and management of engines is described with special attention to the uses to which they may be put. The book is intended for the farmer, written in simple terms, and gives a comprehensive view of the subject. 556 pages, 179 illustrations. Cloth, net, \$2. Norman W. Henley Co., New York.

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E. L. Anthony, B. S. A., professor of dairying at Pennsylvania State College, has written a "Dairy Laboratory Manual and Notebook," which gives 41 exercises in dairy work, including Bab-

cock testing, standardization, cream separators, coolers and churning. Detailed instructions with illustrations explain fully the use of all apparatus in a dairy laboratory. The treatise is one of the most complete ever published on this subject. 72 pages. J. B. Lippincott Co., Philadelphia.

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That Jersey breeders are making great progress to place their breed in the front rank of dairy animals and that they are taking the yearly record as the true test of a cow's ability to produce may be seen from the records of the 1300 cows given in the second volume of the "Register of Merit," published by the American Jersey Cattle Club. These volumes may be obtained from the club for 25c apiece. Another publication of the club which should be in the hands of all who are interested in this breed is "Jersey Sires and Their Tested Daughters." In this book is given the record of every Jersey bull with at least one daughter with a test accepted by the club. The book is well illustrated with Jersey sires and also contains an index to all tested cows. It may be obtained from the club at New York for \$2.00.

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"Conquest of the Tropics," by Frederick U. Adams. This book is the first of a series planned to describe big businesses whose operations concern and should interest the public. This is a story of the development of the United Fruit Co. The book will possess an interest to the public who demand such corporations to give an account of their stewardship. 368 pages, illustrated. Net, \$2.00. Doubleday, Page & Co., Garden City, N. Y.

Alumni

What The Busy Grads Are Doing



Courtesy "The Ohio Farmer."

James E. McClintock, who has been appointed as supervisor of publications of the extension service of the college of agriculture at the state university, is an Ohio product. He was born and raised on a farm in southeastern Ohio and received his early education in the rural schools in which he later taught for a short time. In the fall of 1901, Mr. McClintock entered the two-year course at the college of agriculture, and the following year entered the regular four-year course in agriculture and graduated in the class of 1906. He ac-

cepted an appointment of scientific assistant in the United States bureau of soils in February, 1906. He held this position until August, 1907, when he went to the University of Maine as assistant professor of agronomy and as director of agricultural extension work. In August, 1909, he accepted an appointment as specialist in Landgrant college statistics with the United States Bureau of Education. In 1910, Mr. McClintock was employed by the International Correspondence Schools and for the past four and one-half years he has been agricultural editor for that institution. Mr. McClintock assumed his duties at the college of agriculture September 1st.

Dwight W. Weist, '05, is now assistant general secretary of Cleveland's Metropolitan Young Men's Christian Association. Attracted by the study of character development processes in the lives of students, he determined to make this his life work rather than to help improve the breeds of live stock, the phase of agricultural work in which he was most interested. His first work was to reorganize the Y. M. C. A. of Ohio Northern University at Ada, Ohio, but he was soon called to take charge of similar work at the University of Illinois, spending two years at that place. In 1908 he was called to Stanford University on the Pacific coast, spending four years at that student center. His present work began in 1912 and now the association has a membership of over 1,200 men in eight different branches.

W. A. Martin, '05, is farming near Kenton, Ohio. He is developing a fine dairy, having at present about 100 cows. He makes a specialty of breeding stock and expects to develop this line to its fullest extent. Dairying and general stock farming have made quite

an improvement in the fertility of his farm, the yields of grain becoming more noticeable each year.

J. W. Hammond, after graduating from Ohio State, entered the graduate school of the University of Illinois and received his degree of M. S. in 1908. Since then he has been employed in the department of animal husbandry at the Ohio Experiment Station, in which department he ranks as associate.

R. J. Roudebush, '13, is teaching secondary agriculture at West Liberty State Normal School, W. Va.

Charles Fritz, '12, obtained his master's degree in 1914 from Ohio State, doing the greater part of the work at the Ohio Experiment Station. He is working on special chemical investigations at that place at present.

G. E. Boltz, '10, is doing chemical work at the Ohio Experiment Station. He is interested in the analysis and determination of fertilizing elements in farm crops.

Don Mote, '12, was married to Miss Josephine Mower, of Wooster, Ohio, on July 1, 1914. They will reside at Wooster, Mr. Mote being the entomologist for the animal husbandry department at the Ohio Agricultural Experiment Station.

F. P. Stump, '04, was the first business manager of "The Student" and was one of the investigators of the Agricultural Students' Union at that time. Since leaving the university he carried the same plans for co-operation and is at present the business agent for "The Farmers' Commercial Club" at Convoy, Ohio. He has also directed his attention to the breeding of high class Red Polled cattle and Berkshire swine.

W. H. Pew, '04, is now head of the department of animal husbandry at Iowa State College. After receiving a degree at Iowa he went to New Hamp-

shire College of Agriculture as professor of animal husbandry. In 1909 he went West and has held his present position since 1912.

Mr. and Mrs. Don W. Griffin left Aug. 26th for England, from which country they will travel east to India. Mr. Griffin is a 1914 graduate and will have charge of soils and agricultural engineering work at Ewing Christian College, Allahabad, India. A fully equipped agricultural department for experimental work in connection with the college will be conducted on 53 acres recently purchased near Allahabad.

M. D. Helser, '14, will teach animal husbandry next year in Arkansas.

R. R. Buchanan, '14, will teach agriculture at Spring Valley, Minn., High School.

Richard Faxon, '10, has recently been appointed nursery inspector in the Ohio orchard nursery inspection department. Mr. Faxon was formerly engaged in similar work in the West.

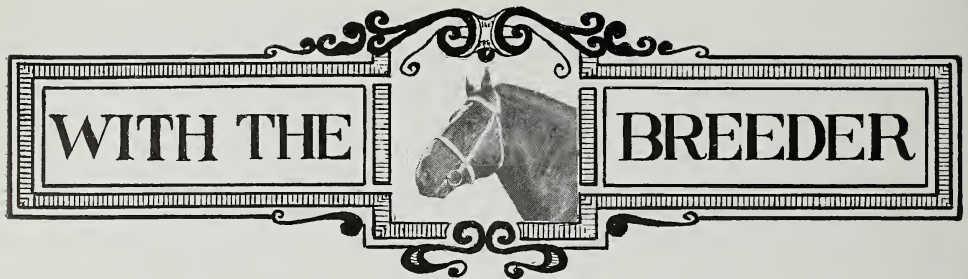
A. C. Brookley, '12, who has been teaching agriculture in the high school at Adrian, Mich., reports a very successful year and he has been re-elected to the position.

Reed Brigham, '12, who has been an instructor in botany at the University of Illinois and received his Master's degree there last June, will go to the University of Michigan this year to work for a Doctor's degree and at the same time to be an instructor in botany. While in Michigan he will spend most of his time in landscape gardening.

W. S. Courtright, '13, is with the Dayton Pure Milk and Butter Co., Dayton, Ohio.

W. E. Ruth, '12, is chemist for the Rex Chemical Co. of Cleveland, manufacturers of spray materials.

F. L. James is engaged in commercial orcharding on his farm near Gallipolis.



Great interest is manifested in the development of Holstein-Friesian cattle of the highest type and greatest productivity. Keen competition for the best in this line resulted in two record sales this season. The Holstein bull calf, King Segis Pontiac Chicago, was purchased in June for \$20,000 by Messrs. Hart, Otis and Van Hagen of Illinois. The other event which touched off the financial fireworks in the ranks of the breeders of the blacks and whites, was the sale of a half interest in the three-year-old Holstein bull, King Segis Pontiac Alcartra, for the enormous sum of \$25,000. The seller was John H. Arfmann, of Middletown, N. Y., and the purchaser The Lawson Holding Company of Lagrangeville, N. Y. An exploitation of these breeding animals simply on the basis of price would, no doubt, be a detriment to breeding purposes and it is expected that their effect will be greatly felt in the increased production of their daughters.

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Final plans have been made by the Delaware County Percheron Horse Breeders' Association for its first futurity contest to be held at Delaware in October. Besides liberal cash prizes, two handsome silver trophies will be awarded the winners in both the stallion and filly classes. There are over three hundred high class registered Percherons owned and bred by farmers in this vicinity. The organization

exhibits at the Ohio State Fair every year, and for the accommodation of buyers furnishes a complete list of all Percherons in the county which are for sale.

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In response to the call of the secretary of agriculture a wool conference was held in Washington. A representative gathering of ranchmen, farmers, manufacturers, wool dealers, wool experts, and government officials met and discussed every phase of the wool industry. Manufacturers and growers clashed on certain measures of reform, but the results of the conference should be a great benefit to this immense industry which feeds and clothes the people. A revision is expected in the old system of raising sheep, and the growing and marketing of wool. American producers must use greater care in the handling of fleeces in order to cope with foreign competition, and Uncle Sam is in a better position now to assist in putting into effect those needed reforms.

News comes that Baron of Buchlyvie, Scotland's most illustrious representative of the Clydesdale breed, is dead. This famous son of Baron's Pride, is the stallion for which William Dunlop, of Dunure Mains, gave at public auction \$47,500, a price unequaled by any other draft breed. Baron of Buchlyvie has been a phenomenal breeder and leaves sons which bid fair to rival him as getters of high-class stock.

Mr. Dunlop has since purchased the yearling Clydesdale stallion, The Birkenwood, for \$10,500. The colt won first and reserve championship at the recent Highland show, held in southern Scotland.

Clydesdale breeders in Scotland are aware of the need of increasing the substance of their breed in order to cause it to meet with greater favor upon the market. They recognize the fact that the smart Clydesdale without weight and substance is not the ideal draft horse. An effort is now being made to increase the weight and drawing power of the breed, at the same time retaining all the finest features of sharp bone, clean legs, and activity of movement.

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The 1914 grand circuit races started at the North Randall track, Cleveland. A new world's record for four-year-old pacers was set by William, a bay son of Abe J., when he paced a mile in 2:02. This record was formerly held by Baden Direct, 2:02 $\frac{3}{4}$. William also won the 2:05 pace at Detroit the following week. On the last day at Cleveland, Frank Bogash Jr. won the opening heat of the championship pace in the sensa-

tional time of 2:01 $\frac{1}{4}$, breaking the track record and lowering William's record by three-quarters of a second. At Grand Rapids William lowered his record to 2:00.

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Hereford interests in Kentucky received a stimulus when Col. E. H. Taylor, of Frankfort, purchased the Hereford bull, Beau Perfection 24th from W. H. Curtice, of Eminence, Ky., for the magnificent sum of \$12,000. Colonel Taylor owns over two thousand acres of the finest blue grass pasture, and expects to establish one of the best Hereford herds in the United States.

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C. K. G. Billings has presented the U. S. officials the handsome trotting stallion, Wilmering, 2:12 $\frac{1}{4}$. He has been shipped to Fort Collins, Colorado, to be used in experimental breeding work.

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Eminent's Bess, formerly the world's champion Jersey cow, died recently at Roycroft Farm, Sidnaw, Michigan. Death was due to pneumonia owing to the fact that only ordinary care was taken with her after the completion of her wonderful record.





SEPTEMBER NEWS NOTES

Visitors to the Ohio State Fair are always welcome to visit the university during their stay in Columbus. Guides on the campus and on the farm will explain any feature of the work or anything concerning the buildings.

COUNTRY LIFE WEEK.

Thirty-five counties were represented in the Country Life Week meetings held at the university August 10-14. There was a creditable attendance as compared with other similar conferences. Many of the speakers gave personal accounts of the work they have been doing in their communities. One of the important speakers was Mrs. Virginia Meredith of Indiana, who spoke on "Woman's Share in Community Improvement."

Those in attendance at the Country Life meetings formed an Ohio Rural Life Association whose purpose is to co-ordinate the efforts of various agencies interested in rural advance. C. O. Gill, Secretary of the National Committee of Churches and Country Life, has come to the state to assist in the work of organization. A committee was appointed to promote the rural life work and the federation of rural churches in the state with Pres. W. O. Thompson as chairman.

The three year course in agriculture will be instituted October 19. This

course of 5 months will supplant the former two year course and was designed to meet the needs of country boys who can only spend the winter months in school. The only requirements are that the boy be 17 years of age, that he has completed the work of the eight grade and has had one year of practical farm experience. Particulars may be obtained from the Dean of the College of Agriculture, Columbus.

The Ohio State Lantern formerly a weekly paper of the students at the university, will be published this year for five days a week. Students in journalism will be required to do laboratory on it, to count as university credit. Five managing editors will be appointed, each to have charge of the edition for one day a week.

Three large pictures have recently been hung in the halls of Townshend Hall. These photographs are of J. W. Decker, formerly Professor of Dairying; J. M. Smith, for eight years a trustee of the university; and H. A. Weber, who was Professor in Agricultural Chemistry. To the latter a bronze tablet has been placed in Townshend Hall "in grateful remembrance and loving appreciation of his services to the university and to the cause of agriculture."

Townshend Literary Society.

To acquire eloquence, fluency and ease in public speaking this society offers excellent opportunities. Lively, enjoyable meetings were held each week last year. Come to the first meeting and get acquainted.

The new Botany and Zoology building and also the new Horticultural building will be occupied at the beginning of the school term. Both of these buildings are now rapidly nearing completion and walks are being laid to them. On the west side of the Library building a wide, semi-circular drive has been constructed. Leading from the east door of the building to the High Street entrance is a cement sidewalk.

Nearly 1,000 students were in attendance at the summer school and in the teachers' courses. This is the largest attendance that the university has ever had during the summer session, due to the fact that many of the elementary courses have been given for the first time.

V. C. Smith, formerly assistant to the dean of the college of agriculture, has been appointed secretary of the college to succeed Prof. H. C. Ramsower. The latter is now head of the newly created department of agricultural engineering. He is assisted in his department by F. W. Ives, formerly of the department of engineering drawing.

John J. Falconer of Madison, Wis., has been appointed Assistant Professor of Rural Economics to teach farm management. He is a graduate of New Hampshire College of Agriculture and has studied three years in Rural Economics in Wisconsin, where he received

his doctor's degree last June. He has also done farm survey work for the U. S. Dept. of Agr. and has been working on a history of agriculture in the United States.

The U. S. Department of Agriculture has attempted to make a survey in Ohio, West Virginia, Pennsylvania and Virginia of the distribution of the 17 year cicada. The damage of this insect to young orchards is serious in some regions. The results of the investigation will probably be published at a future date.

Five weeks' courses in poultry and fruit raising, dairying, soils, bookkeeping and home economics have been planned by the U.S. Dept. of Agr. which can be taken up by groups of ten or more persons. Lectures, books and lantern slides will be furnished by the Department, while the state will lend laboratory apparatus and a reference library to each group. Questions from the state agricultural college and the department will conduct the classes.

State Highway Commissioner Marker has let contracts for the improvement of Ohio's roads and claims that soon it can boast of the best in the country. It is estimated that 1,000 miles of country roads will be built this year at an expense of \$7,000,000. Mr. Marker has tried to abolish grade crossings in the rural districts in connection with the improvement work. A pageant has been planned for the state fair showing the growth of road improvement in this state. The largest county contract was in Trumbull county, where there were four roads to be made at a cost of \$226,000.

Agricultural Society.

This society is the only one representing every individual taking an agricultural course. Noted speakers address this club on vital, interesting subjects of farm life. You are cordially invited to attend the meetings. Watch for the first announcement.

The recent meeting of the General Assembly of the Presbyterian church enthusiastically endorsed the plans for the church to furnish a specially trained minister for every state university to assist in the religious, moral and social training of the students. This is not to be interpreted as a denominational propaganda, but is the church's cheerful contribution to the great work of developing Christian character. Rev. William Houston has been assigned to Ohio State to serve the students in the way that seems best. He aims to send forth students prepared to be of real help to the religious uplift of the community where they may live.

Horticultural Society.

Every student should belong to a society which aims to develop his chief interests. Hence, if you are a hort. student, you need the fellowship of this society. It needs you. Get acquainted.

EXTENSION NEWS.

Prof. A. B. Graham, for nine years head of the extension department at the university, resigned in July to take up similar work with the New York State School of Agriculture on Long Island. Prof. Graham started the extension work in Ohio without a single assistant when only two other states did any agricultural extension work. A conflict of authority between the

university officials and the agricultural commission accounts for his resignation. Extension work during the coming year will be in charge of Clarke S. Wheeler, '12. Mr. Wheeler has been associated with this work with Prof. Graham and thus has become familiar with the methods used in conducting the work.



C. L. Long has been appointed in the extension department in horticultural and poultry husbandry work.

"Ten Common Household Insects" is the title of a recent extension bulletin by Herbert Osborn. "School Exhibits" is the title of one by H. E. Eswine and Treva Kauffman, which deals largely with exhibits of grain, weeds, forestry and art work. Helen Scott Place wrote the last extension bulletin entitled "Household Decoration." "The Silo for the Dairy" is treated by Prof. Oscar Erf of the Dairy Department in the Farmers' Reading Course bulletin. Any of these may be obtained from the Extension Department, Townshend Hall.

George Crane, '12, former extension editor, is now with the American Cyanamide Co., at Buffalo, N. Y., as assistant agriculturist. Preliminary to his work he took a trip through many of the southern states to study agricultural conditions.



AGRONOMY.

George Livingston, who has been studying crop conditions of Europe the past summer, will return to Ohio State at the opening of the school term if war clouds are not too threatening. He will be acting head of the department during the absence of Prof. A. G. McCall. Prof. McCall will lecture over the state until about Sept. 15 at the fertilizer demonstrations conducted under the extension department.

Crops on the university farm were exceptionally good this season. Over 100 acres were planted to corn, 30 acres of which will be used for silage. A 16 acre field was planted to Blue Ridge ensilage corn to compare it with the local field varieties.

One 22 acre field of alfalfa yielded 54 tons at the first cutting. Two other crops have since been taken from the same field which is on the south side of the sewer.

The soy beans were planted earlier than usual this year and they yielded more than in former years.

Little work has been done on the new tract purchased last year except to repair buildings. A preliminary survey for a complete drainage system has been made.

ANIMAL HUSBANDRY.

Two new appointments have been made in this department. J. S. Coffey, who graduated at Illinois in 1912 and has taught at Purdue the past two years, was appointed assistant professor. He is a brother to W. C. Coffey at the University of Illinois.

Tom Stone, a 1914 graduate from Illinois, will have charge of freshman work in animal husbandry. He is a son of "Uncle Dick" Stone, noted breeder of Oxford sheep in Illinois.



Several additions have been made recently to the swine herd at the university. Four Poland China and two Berkshire barrows have been purchased for class room work. Prof. Plumb purchased a well bred Yorkshire boar.

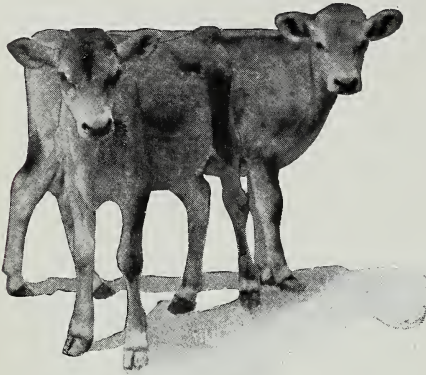
He also purchased a Southdown and a Shropshire ram for breeding purposes in the university flock.

Saddle and Sirloin Club.

Animal husbandry students with at least one semester's credit are needed in this club. Look at the work they have been doing for the college and you will decide to become a member.

A new instructor in the agricultural chemistry department is J. L. Hutchison, a graduate from Kansas.

F. J. Salter, '13, has been appointed instructor, and G. M. McClure, '14, assistant in the same department.



DAIRY.

Prof. Oscar Erf spent the month of August and early September in the White Mountains of New Hampshire.

W. L. Clevenger in company with Fred Nabbs, spent the summer studying dairy conditions near Berne, Switzerland. He expects to return by the opening of the school term if war conditions will permit.

The dairy department of Hartman farm has been taken over by J. N. Gibson, its manager for some years, and will be continued by him. This department was the last to remain under his supervision, the other departments having been let out to tenants. The farm consists of about 4,000 acres and formerly pure bred live stock was kept in great abundance.

The dairy department has an exhibit at the State Fair. Did you see it?

EXPERIMENT STATION NEWS.

Yields in the variety tests of wheat ranged from 30.3 to 45.9 bushels; the average of the 66 varieties and selections being 38.35 bushels.

Facilities for feeding 40 head of cattle individually is one of the features of the new cattle feeding shed. A new 140 ton metal silo has been erected near the cattle shed and will be used in connection with feeding experiments of the animal husbandry department.

Plans for a new dairy building have been completed and work on it will begin at once. The new building will be much larger and better equipped than the old dairy building, and, in addition will contain a number of laboratories for the departments of bacteriology and animal nutrition.

Trial shipments of apples to Pittsburg and Columbus have brought letters of commendation from the commission merchants of those cities. The apples were carefully graded and packed in one-third bushel baskets and sold for \$1.74 a bushel, a price considerably higher than market quotations.

One of the station county fair exhibits was shown at the Miami Valley Chautauqua held at Franklin, Miami County. Several members of the station staff delivered addresses during the week. Unusual interest was shown in both exhibit and addresses.

Great damage was done to the station's greenhouses by the recent hail storms.

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It safeguards character to bring about the co-operation necessary to overthrow certain conditions on the campus hurtful to manhood.

To accomplish this it needs the loyal and active support of every student who calls himself a man.

It promotes constructive religious work in co-operation with the Churches.

It promotes helpful citizenship of the new order by using upwards of two hundred men in volunteer service connected with the missions, city and county places of detention, the Associated Charities and social settlements.

It performs individual student help as follows:

- (a) Special service to new students in the fall by means of an information bureau, with inspected list of rooms and other aid.
- (b) Free Employment Bureau—giving over 450 men last year means for partial or entire self-support.
- (c) Personal interviews; personal friendships; special help to men who are losing out morally.

It gathers men together for acquaintanceship in a wholesome manner in special social functions.

Its Thursday evening 6:45 to 7:30 meetings are led by the best and sanest men available in the city and state.

Our own President led our religious meetings last year for five nights, addressing 2,998 students.

Men, stand for those things that are standing shoulder to shoulder for you. Stand for the right—you'll enjoy it. It will help the other fellow. You'll get real satisfaction out of living.

Come around. We want to know you as a red-blooded Ohio State Booster.

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BEGINNERS' CLASS FRIDAY evening,
Sept. 18th, 7:30 o'clock. First lesson.

SECOND TERM CLASS MONDAY
evening, Sept. 21st.

OPENING RECEPTION THURSDAY
evening, Sept. 24th.

OAK STREET ACADEMY,
827 Oak Street.

BEGINNERS' CLASS WEDNESDAY
evening, Sept. 23rd.

MATINEE CLASS FRIDAY afternoon,
Sept. 23rd.

TUITION.

Gentlemen, per term of 10 lessons..... \$5.00

Ladies, per term of 10 lessons..... 4.00

Private lessons, \$1.00; six for..... 5.00

Tuition can be paid \$1.00 per week until paid.

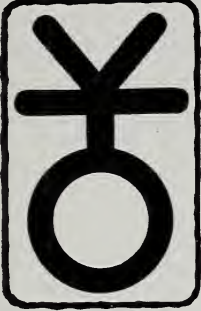
Private lessons can be had afternoon or evenings.

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Will organize Beginners' Class Wednesday evening, October 7th, 7:30 o'clock. Tuition: Gentlemen, per term of 10 lessons, \$5.00; Ladies, per term of 10 lessons, \$4.00. Tuition can be paid \$1.00 per week until paid.

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Private Lessons	\$1.00
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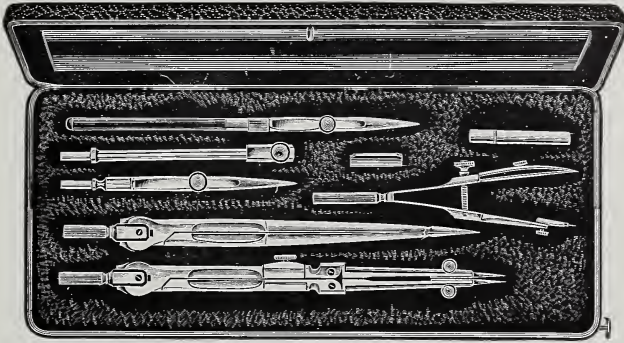
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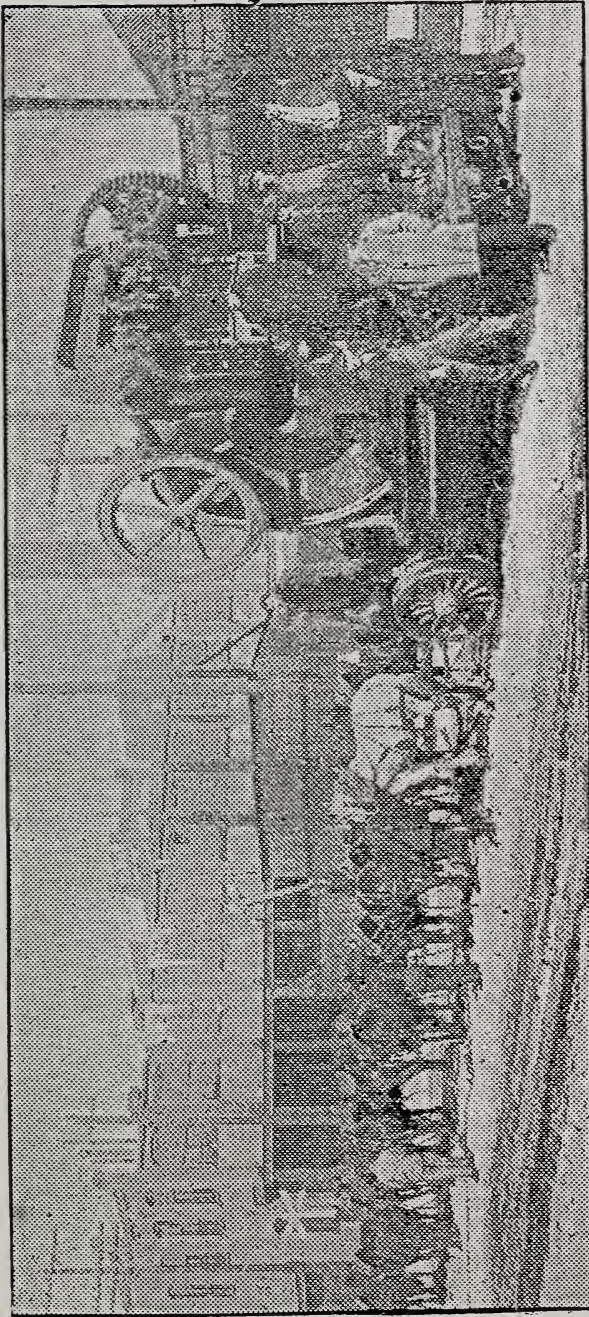
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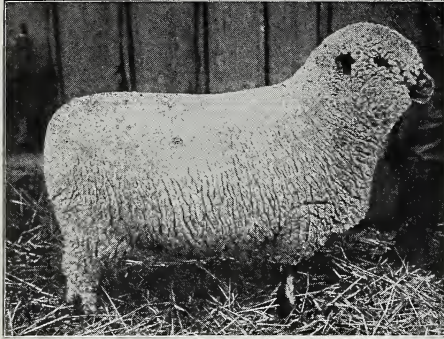
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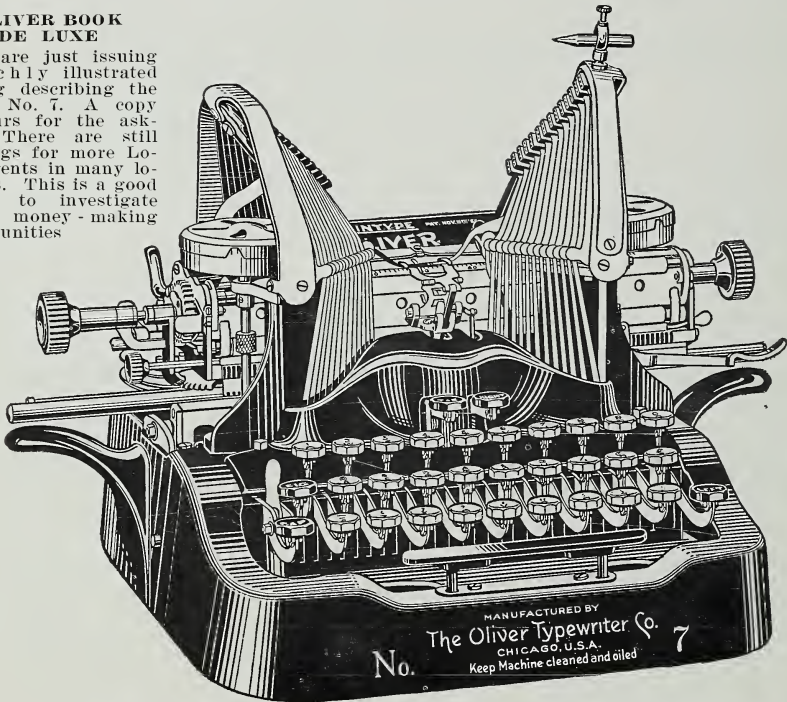
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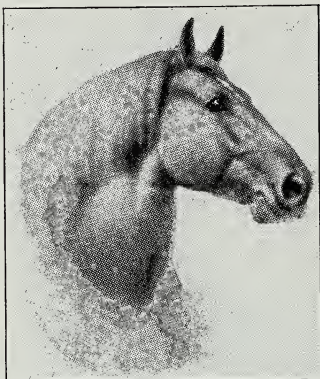
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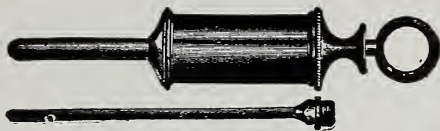


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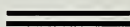
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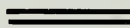
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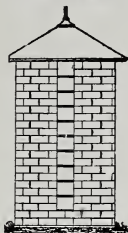
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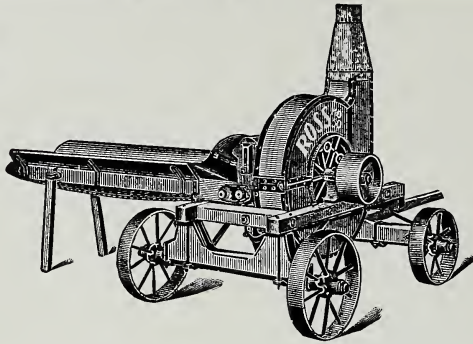
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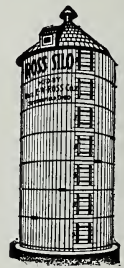
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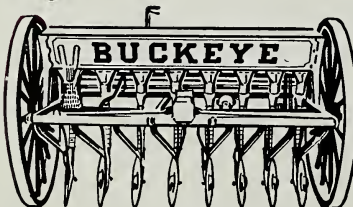


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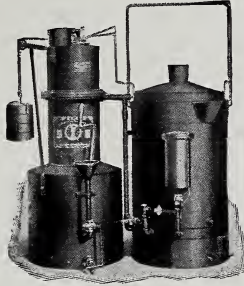
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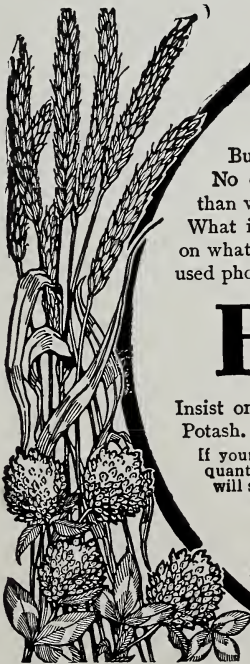
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